FALLEN EAGLES:
THE ITALIAN 10TH ARMY IN THE OPENING CAMPAIGN IN THE WESTERN DESERT, JUNE 1940 – DECEMBER 1940

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The Italian Army developed a sound and unique combined arms doctrine for mechanized warfare in 1938. This new doctrine was called the "War of Rapid Decision." It involved the use of mechanized warfare in the Italian version of the blitzkrieg. This doctrine evolved from the lessons learned in the Italian-Ethiopian War of 1935 to 1936 and the Spanish Civil War of 1936-1939. With Italy's entry into World War II, military operations ensued along the Libyan-Egyptian border between the Italian 10th Army and a much smaller British Western Desert Force. The Italian Army in Libya outnumbered the British Army in Egypt by a ratio of four to one. The setting seemed to be ideal for the employment of the War of Rapid Decisions. Moreover, Marshal Rodolfo Graziani, who was the commander of the Italian 10th Army in North Africa during its first campaign in the western desert had pioneered this new from of mechanized warfare during the Ethiopian War. Surprisingly, the Italian forces in Libya did not employ their new doctrine, reverting instead to more conventional techniques of "mass." It was Graziani's failure to utilize the doctrine which he had helped to develop that led to Italy's embarrassing defeat in 1941.

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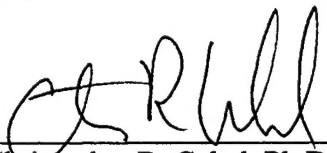

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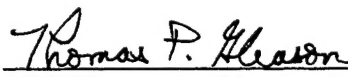

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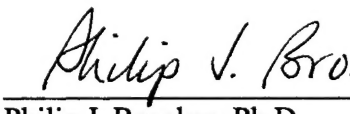

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ABSTRACT

FALLEN EAGLES: THE ITALIAN 10TH ARMY IN THE OPENING CAMPAIGN IN THE WESTERN DESERT, JUNE 1940-DECEMBER 1940 BY MAJ Howard R. Christie, USA, 154.

The Italian Army developed a sound and unique combined arms doctrine for mechanized warfare in 1938. This new doctrine was called the "War of Rapid Decision." It involved the use of mechanized warfare in the Italian version of the blitzkrieg. This doctrine evolved from the lessons learned in the Italian-Ethiopian War of 1935 to 1936 and the Spanish Civil War of 1936-1939. With Italy's entry into World War II, military operations ensued along the Libyan-Egyptian border between the Italian 10th Army and a much smaller British Western Desert Force. The Italian Army in Libya outnumbered the British Army in Egypt by a ratio of four to one. The setting seemed to be ideal for the employment of the War of Rapid Decisions. Moreover, Marshal Rodolfo Graziani, who was the commander of the Italian 10th Army in North Africa during its first campaign in the western desert had pioneered this new form of mechanized warfare during the Ethiopian War. Surprisingly, the Italian forces in Libya did not employ their new doctrine, reverting instead to more conventional techniques of "mass." It was Graziani's failure to utilize the doctrine which he had helped to develop that led to Italy's embarrassing defeat in 1941.

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This study is dedicated to my family, Valerie, Brent, Nicolette, and Alexandra, without them I am nothing. Maybe now they will see more of me than the back of my head at the computer. The ultimate reason for this work is so others do not have to pay for the same mistakes again with their own lives.

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TABLE OF CONTENTS

CHAPTER 1

INTRODUCTION AND BACKGROUND, 1911-1939

This is a study of the Italian Army's opening campaign and subsequent defeat by the British Commonwealth in the opening stages of the North African Campaign. It will look at the fundamental reasons for the failure of the Italian Army in North Africa to use the doctrine established in 1938. The chief strategic importance of Egypt and of this campaign lies in the command of the Suez Canal, which connects the Red Sea and the Mediterranean Ocean. The Italian 10th Army and its commander Marshal Graziani were defeated during the first campaign in the western desert, June 1940 to December 1940, by the British Commonwealth in North Africa. Marshal Graziani failed to use appropriate Italian military doctrine in the initial Italian campaign in the invasion of Egypt. This thesis will develop this theory by examining Italian doctrine, leadership, the Army's organization, and equipment in North Africa during the opening stages of the war in the desert and the Italian invasion of Egypt.

The Italian Army's military record of coalition warfare with the Axis forces in World War II is not well known or understood. This is due to Allied propaganda and the initial defeats suffered by Italian forces. The Italian Army in 1938 adopted a new doctrine of mobile and combined arms warfare. With this new doctrine Italy hoped to defeat her enemies and expand her empire. Marshal Graziani, a veteran of World War I and Italy's colonial campaigns, developed a new motorized doctrine during the Italo-Ethiopian War, which was expanded in the Spanish Civil War and ultimately adopted as doctrine in 1938. Ironically, when Graziani led the 10th Army to war in 1940, he failed to utilize the theory that he himself had been instrumental in developing. His force was

severely defeated by a smaller British Commonwealth Army of only 35,000 soldiers. This defeat caused the German military to intervene in North Africa, and showed the failure of the Italian combined arms.

The defeat of the Italian 10th Army during the opening stages of the North African campaign, June 1940-December 1940, was a severe blow to Fascist Italy and the Italian Empire. This defeat allowed the British Empire to achieve one of her greatest victories on land, capturing 130,000 Italian soldiers, 845 guns, and 380 armored vehicles (Macksey 1971, 151). This defeat failed to meet the strategic military goals and national political objectives of the Italian government in World War II. Italian arms failed to produce the desired results ensuring military reliance on Germany to continue the Axis war effort in North Africa. Italy no longer played the dominant role in her African colony, Libya, which she governed from 1912 to 1943, or the Mediterranean Basin, which she sought to control. Successful application of Italian doctrine may have reversed the ultimate outcome of Fascist Italy in World War II during the initial campaign in North Africa.

With the Italian unification in 1860-1870, Italy was set on the world stage to become a great power. Italy was one of the last European nations to become unified. Only Germany would be behind her 1870. The measure of great powers at the time was the number of colonies that one possessed around the world. Italy becoming unified late in her history was in a poor position to increase her status and standing in the race for colonies. This did not deter Italy and she was drawn into the race to become a great power. Italy had to confine her expansion due to the late unification of her country. Italy sought to restore her lost imperial provinces and recreate the four shores of the ancient

Roman Empire to build her colonial empire. These four shores of Italy were the Adriatic, Tyrrehenian, Sicilian, and North African coast. A natural expansion would lead her to the shores of Libya (Trye 1998).

In September 1911 Italy finally found her chance for the expansion she desired to the fourth shore, which was North Africa. With limited areas to expand she would have to choose her enemies and expansion carefully. Italy declared war against the Ottoman Empire and used this war for expansion into Libya and the Dodecanese Islands in the eastern Mediterranean. Seeing that the Ottoman Empire was weak, due to the Balkan Wars, she struck out against them. The Italian military quickly captured all the major port cities in Libya and the Dodecanese Islands. Italy was successful in her initial war aims in the summer of 1912. Because of this, the Ottoman Empire signed the peace treaty of Lausanne on the 18 October 1912. With the successful conclusion to the war Italy had firmly established herself in coastal Libya. The interior and Senussi Tribes were yet to be conquered.

The threat to Italian aims in its new colony of Libya came from the Senussi tribes. The Senussi tribes were the native people of the desert areas of Libya. Most of the manpower of the Ottoman Army in Libya came from these tribesmen. They viewed the peace treaty as a document which did not apply to them and felt that Libya should be their own independent country. Instead of surrendering or peacefully joining the new Italian administration after the Ottoman Empire's defeat, they continued the war against Italy. They viewed the Italians in the same manner as the Ottoman Turks, just another occupying power to their homeland. They controlled the interior of the province of Cirenaica in Libya. This war lasted from 1912 to 1917 and was a hard-fought campaign

for the Italians. This war lasted until 1917 when the Senussi tribes were gripped by famine and when one of the major leaders defected to the Italian cause. This defection caused the Senussi tribes to lose power and ground against the Italian army. The Italian army was then able to occupy and expand their holdings and the rebellion ended across all of Libya.

This temporary peace did not last long for the Italians in Libya. In 1921 a new governor was appointed who used harsh and strict methods for governing Libya. These methods of Italian rule did not placate the native desert tribes of Libya. Instead it fostered negative feelings and fueled the fires of revolt. In late 1921 the Senussi tribes rose in revolt against the Italians. The Senussi attacked the coastal cites, where they were driven off and defeated. They would then retire to their desert homelands and continue a guerrilla war against the Italian Occupiers. Colonel Rodolfo Graziani, one of the youngest colonels in the Italian Army, participated in this fighting and was decorated for his actions. In 1923 Colonel Graziani led a campaign against the Senussi tribes of the interior. This action was the beginning of the Second Senussi war, which lasted from 1923-1932. He was a prominent figure over the course of the entire war.

This Second Senussi War lasted for ten years and was long and bloody for both sides. This protracted struggle drew valuable resources and material from the Italian military. It ended with a campaign by General Graziani who attacked the last Senussi stronghold in Libya, Cuff oasis, which was deep in the Sahara desert. He attacked this stronghold with an overwhelming force of tanks, artillery, infantry, and airplanes, supported by 3,500 camels. This victory would add additional fame to General Graziani's reputation as a great leader. With the surrender of the last Senussi stronghold

the war was over, and no organized resistance was left to the Italian administration in Libya. Marshall Pietro Badoglio, the governor general of Libya, declared Libya and Cirenaica pacified. With Libya pacified Italy could continue with building her colony and she had an important, almost dominate, military position on the North African shore. With the colony secure it was open to further military, industrial, and colonial development. Air Marshal and Governor Italo Balbo became governor of Libya in 1934. He was given the mission to transform a barren, backward colonial territory into an extension of Italy--"a fourth shore"--to add to Italy's Tyrrhenian, Adriatic, and Sicilian shores (Taylor 1996, 73).

Libya was to become an extension of Italy and a showplace of Fascism. On 9 January 1939, the colony of Libya was made part of the Italian Empire. Balbo could now take credit for having created the forth shore (Taylor 1996, 80). The Italians started numerous and diverse businesses in Tripolitania and Cirenaicia. These included an explosives factory, railway workshops, Fiat Motor works, various food processing plants, electrical engineering workshops, ironworks, water plants, agricultural machinery factories, breweries, distilleries, biscuit factories, a tobacco factory, tanneries, bakeries, lime, brick and cement works, Esparto grass industry, mechanical saw mills, and the Petrolibya Society (Trye 1998). Italian investment in her colony was to take advantage of new colonists and to make it more self-sufficient. Total native Italian population for Libya was 110,575 out of a total population of 915,440 in 1940 (General Staff War Office 1939, 165/b). The goal was to have a self-sufficient colony not dependent on the motherland for survival. "They must have grown a lot of grapes, as there was a big winery in Tripolitania. I have vivid memories of arriving there and seeing a huge

paddock of garden peas. After many weeks of bully beef and army biscuits you can imagine we scavengers going through the pea paddock until there wasn't a pod left" (Trye 1998).

The governmental seat and military headquarters for Libya was located at Tripoli. The colony was governed by a governor who was also commander of the ground, land, and sea forces of the colony. He was nominated by royal decree on the proposal of the Minster for Italian Africa and confirmed by the councils of ministers (General Staff War Office 1939, 8/b). A vice-Governor was located in Benghazi. The system of government was based on the ancient Roman system of perfects for each province in the colony.

The Italian government invested heavily in her colony during the interwar period. Large immigration of Italian civilians, and an investment in Italian Army forces, naval bases, and airfields provided the Italian army and government with an ideal and enviable position. From this strong military base the Italian government had a strategic position which could threaten both French North Africa and British-controlled Egypt. Not only could this colony be used for economic reasons but as a stepping stone for further Italian expansion in the Mediterranean Basin.

Libya was situated between French North Africa to the west and British-controlled Egypt to her east. From Libya an Italian Army could invade Egypt and secure the Suez Canal. The Suez Canal was the strategic objective of the Italian military. This could have threatened the British position in the Middle East, Sudan, the eastern Mediterranean and a pathway to India. Italian arms could have then proceeded to dominated the Red Sea, secure her lines of communication with Italian East Africa, and force the British Navy to abandon the Eastern Mediterranean. This would be the ultimate

strategic goal of Fascist Italy, the strategic theater commander Marshal Graziani, and later, after the initial Italian defeat, General Irwin Rommel, commander of Panzer Army Africa.

The area of Libya was 1,774,00 square kilometers--5.5 times the area of Italy (Trye 1998). Of this area the vast Sahara plateau covers approximately 90 percent making it a land of desert. The Libyan Desert can be divided into two zones, the inner and outer zone. The outer desert consists of an inverted "L" of land, which stretches southward up the West Bank of the Nile River and westward along the Mediterranean coast. Across the northern portion of this "L" is the inner desert which is the coastal portion of Libya. This northern zone of the desert is where most of the fighting would take place from 1940-1943. The most significant feature of this battlefield was that troops, equipment, supplies, and water had to be brought vast distances to where they were to be employed. Libya consisted of two provinces during the Italian occupation. The western province was Tripolitania and the eastern province was Cirenaica.. The population of Libya was almost 800,000 native people and 110,000 Italians in 1940 (Greene and Massignani 1994, 16). There were a number of important cities, ports, and military installations within the Italian colony of Libya.

The western province of Libya, Tripolitania, is bounded on the west by Tunisia and southern Algeria and extends south to the 29th parallel. It is bounded on the east by Sirta. The most important towns along the coast of this province were from east to west: Misurata, Zilten, Homs, Tagiura, Tripoli, and Zuara. Tripoli was the principal city and port of Libya with a population of 110,292 in 1939 (Tyre 1998). It was the seat of the Italian Governor General. The main economic and industrial development of the colony

was found in this province. It was a brand-new Italian colonial capital and cathedral city, laid out on modern lines and quite distinct from the old Arab town. It was the showpiece of Fascism and the Italian Empire

Tripoli was the major military base for the Army. There were a number of military barracks located in and around Tripoli. These military bases consisted of the imperial barracks, Balli (youth) barracks, which had a motor pool and facilities for 500 vehicles adjacent to it, the tank barracks at Porto Benito, and the P. Veri barracks, which had an adjacent rifle range (Trye 1998). There was a training ground on the plain of Belaschar between Mellaha and Tagiurain on which training exercises, parades, and reviews were held. This area was a good place to practice combined arms warfare and normal military exercises. Tripoli was also the major port and base for the entire colony of Libya. This port alone could handle 45,000 tons of supplies per month (van Creveld 1977, 184). Tripoli would be the main port for the sea lines of communication between Italian North Africa and Italy. It was a vital link to sustain the forces of the empire.

The area between Tripolitania and Cirenaica was known as Sirte. It was located to the east of the town of Misurata in Tripolitania. The Sirte is a vast desert region, which separated the two Italian colonies from each other. This area formed a natural obstacle between the two provinces in Libya. Here is where the border of Tripolitania and Cirenaica officially met. Benito Mussolini had a large ceremonial arch erected here to mark the official border between the two provinces and the completion of the Litoranea Libica, a hard surface road. Throughout the course of the campaigns in the desert, Sirte would be a natural obstacle and a location for the Axis forces to regroup and reconsolidate.

The eastern province of Libya, Cirenaica, was bordered in the east by Egypt and in the west by Tripolitania. The most important towns were, from west to east, Ghemines, Soluch, Benghazi, Tocra, Brace, Tolmeta, Cirene, Appollonia, Derna, Tobruk, and Bardia. The main town and port was Benghazi with a population of 65,704 in 1939 (Trye 1998). It was a mixture of modern Italian buildings and Arab architecture. It contained the headquarters of the naval, army, and air force units stationed in Cirenaica, as well as the local Fascist and government organizations. It contained a number of military barracks. These barracks were the Torelli, with housing for 1,000 troops, and stabling for 100 horses, the Moccagatta, the Royal frontier guards, Campo Erteria (native barracks), and the Tennte Hetzel. This port could handle 45,000 tons of supplies per month (van Creveld 1977, 187), making it the second most important port in the Italian colony of Libya.

The second largest town of Cirenaica was Derna. It was considered to be the most modern and comfortable of the region. It had a civilian population of 12,000 people in 1939 (Tyre 1998). It had a military airport, a naval wireless station, as well as, Sabatina barracks, infantry barracks, and an artillery barracks.

The area of Cirenaica from the Gulf of Bomba east to the Egyptian border was called Marmaricia. This area was extremely poor and devoid of water and trees. The most important center was the harbor town of and naval base of Tobruk. It had a civilian population of 5,032 in 1939 (Trye 1998). The harbor gave excellent protection and was suitable for cruisers, light naval forces, submarines, merchant ships, and light craft. This port could handle 35,000 tons of supplies per month (van Creveld 1977, 187). There was a seaplane anchorage operational from this port. Tobruk was a fortified city with

extensive fortifications constructed to protect it from a seaward or land attack. It contained an army and naval barracks, native Libyan barracks, and the Carabinieri (Para Military Police) barracks. Tobruk would play a dominant role as a military center in the campaigns in the western desert. It was an ideal strategic location for supplying and supporting an army in the desert.

The easternmost settlement of Cirenaica was the harbor town of Bardia. It was the most eastern settlement in Libya and closest to Egypt. The harbor permitted anchorage of ships up to 4,060 tons (Trye 1998). Disembarkation was by lighter craft, which severely decreased its ability to become a major supply base. On the low ground near the harbor, there were military and harbor offices and garages, plus a number of military barracks for the garrison. Like Tobruk, it had permanent fixed fortifications constructed against sea or land attack. Bardia had extensive water pipelines, which supplied water to the entire forward Italian garrison on the Libyan-Egyptian border. Bardia would be the forward logistical and command control center for the Italian Army during the invasion of Egypt in September 1940.

To the south of Bardia, a number of oases stretched into the Sahara desert along the Egyptian border. These oases were Gialo, Garabub, and Cufra. They all had military garrisons and forts constructed to protect these important sites in the otherwise waterless Sahara desert. The oasis at Giarabub was positioned on the extreme western edge of the Egyptian border. The Italians established a meteorological post here in addition to the military garrison. These oases were important links in the ability to travel across the Saharan desert in Libya and Egypt. These garrison posts helped protect the long border between Egypt and Libya and could assist in any defensive or offensive operations.

The "frontier wire" was established in the Second Senussi War. It was designed to stop the traffic of supplies and tribesman between Libya and Egypt. The Senussi Tribes received aid in material and supplies from the British government in Egypt. The fence, itself, consisted of iron pickets ten centimeters in diameter set on concrete bases of 30 centimeters square. Its height above the ground was 1.7 meters with 30 centimeters buried. It was a huge obstacle, which only limited motor transport and personal (General Staff War Office 1939). It stretched from the wells of El Ramleh in the Gulf of Sollum across the high plateau and the barren steppe of the Marmarica beyond the oases of Giarabub for a distance of 271 kilometers. It was designed to restrict and slow down movement, not to stop penetration of the border areas. Italian outposts and mobile patrols performed surveillance on the wire and then reacted to any attempted penetrations.

Three main forts and six smaller forts guarded the length of the wire. The three large forts were located at Amseat, Scegga, and Giarabub. The six smaller forts were located at Ramleh, Sidi Omar, Sceferzen, Vescechet, Garn ul Grein, and El Aamara. They were "Beau Jeste" type forts, armed with modern weapons. These forts were positioned up and down the length of the wire, placed in strategic locations, so that patrols could cover the distances that separated them.

The military and civilian administration of Libya needed an adequate transportation network to defend and utilize the Italian colony of Libya. It would be critical to have modern infrastructure established to support the goals of the Fascist administration. These goals were to economically develop the colony and have it prepared to support itself in wartime. In 1939 there were 11,064 kilometers of road within the colony. There were 3,398 kilometers of these asphalt hard-surfaced roads.

There was a total of 444 kilometers of small gauge rail lines in Libya. There were 271 kilometers in Tripolitania and 173 kilometers existed in Cirenaica (Tyre 1998). These improved transportation networks would prove vital in the rapid movement of mechanized armies and in the logistical requirements to supply these armies.

The costal road was known as the Litoranea Libicia. It was built from 1935 to 1937. This hard-surfaced road stretched the length of the colony for a distance of 1,822 kilometers (Taylor 1996, 80). It was primarily designed to end the communication and transportation disruption caused by the Sirte region of Libya. The route crossed some of the most desolate sections of the coastline, and it was constructed by legions of blackshirts and local labors working under adverse conditions. The road was 4.8 meters wide and could take loads up to 10 tons. It was completed in 1937 and was widely know as the Via Balbia (Tyre 1998). The highway greatly assisted in the easy movement of troops and supplies by a hard-surface connection throughout the colony, thus ending the isolation of the different military garrisons located in the coastal cites along the entire length of the colony.

The Italian small-gauge railroads in Libya were in two separate provinces. The lines in Tripolitania had three short links centered on Tripoli. These three lines led to the cities of Zuara, Taguira, and Garian. The lines in Cirenaica consisted of two lines centered on Benghazi. They ran to the cities of Soluch and Barce. These railroads were of small gauge and used primarily for economic means and local transport of civilians. According to Sapper Colin Campbell, "On arrival at Benghazi I found one engine only in working order and after three days the first train was run. The railway was often referred

to as 'the tramline' as the gauge was one meter. Inclines were steep and I had to secure the services of native brake-man" (Trye 1998).

The war in the western desert was the first example of a desert war between two fully mechanized armies. The nature of the country presented special problems--great distances, lack of water, and the absence of cover--but its very size and featureless terrain offered the fullest advantages to the army possessing superior mobility. The desert terrain of Libya and Egypt made a perfect environment to have mechanized armies fight for dominance.

The Italian military had over 167,000 military personnel, 8000 trucks, 339 armor vehicles, and 306 airplanes in her colony of Libya in June 1940 (Montanari 1990, 463-466). These forces were organized into two separate armies. The 5th Army on the frontier with French Tunisia centered on Tripoli, and the 10th Army on the frontier with Egypt centered on Tobruk and Bardia. Large bases were developed and logistical supplies stored for military operations in Libya against her possible enemies, France and Great Britain. The enemy forces faced them across to borders and the desert areas that separated them.

A desert is not an obstacle to motor or mechanized transport, it only imposes certain restrictions to an army operating within her boundaries. The environment does impose special problems or challenges to the use of motorized or mechanized forces. Movement may be slower in this type of environment due to the terrain and natural obstacles it imposes, but restrictions to operational movement are not insurmountable. The climatic conditions imposed will require faster engine and component replacement and a higher level of maintenance on motorized and mechanized vehicles operating

within them. The key function the desert provides an army is that it does not restrict armies to established road networks and lines of communication. They can maneuver freely, such as a ship on the ocean, within the limitations of their logistics. The vast open tracts of desert allow for this freedom of maneuver. The desert environment is a tactician's paradise and a logistician's hell.

The Italian military had adopted a new and revolutionary doctrine of combined arms warfare in 1938. This doctrine was called War of Rapid Decision. The forces in Libya had all the necessary elements to be successful utilizing this new doctrine. Marshal Graziani successfully used and demonstrated an applied motorized doctrine in the Italo-Ethiopian war, now commanded the Italian 10th Army. North Africa was an almost perfect environment to exercise armored and motorized warfare.

CHAPTER 2

ITALIAN MECHANIZED DOCTRINE AND ITS DEVELOPMENT

In the eighteen months before Italy's entry into World War II, Italy attempted to implement the doctrine of the "War of Rapid Decision." It is difficult to compare Italian doctrinal developments in 1939 and 1940 to other belligerent nations of Europe for the same period of time. All the countries entering World War II were unprepared for the scope and intensity of the war which they were about to undertake. Italy, a noncombatant during the fall of 1939 and the spring of 1940, was intellectually better prepared than most countries that entered World War II. This was based on the newly developed doctrine that had evolved in the course of the 1930s and her combat experiences.

The Italian Army developed a new armored and motorized doctrine in 1938-1939. This doctrine was developed from the lessons experienced and learned during the Italo-Ethiopian war and the Spanish Civil War. But also as important is the *Cicolare 10,500, Impiego ed addestramento dei carri d'assalto,* which was not only for training but also for tactical employment of Italian armored formations. This circular addresses "assault tanks" that were never built, but it does address the employment of L.3 light tanks, which was the primary armored vehicle in Italain armored formations. "Mechanization became official policy with the publication of *La Dottrina Tattica nella Realizzazioni dell'Anno XVI, Circolare 9000 Stato Maggiore on 28 October 1938*" (Sweet 1980, 141). This circular adopted the doctrine of high-speed mobile warfare as the official strategic and tactical concept of the Italian Army. This doctrine was known as the War of Rapid Decision.

To understand this new doctrine an examination must be made and understanding of the doctrinal developments from the lessons the Italian army learned in the conflicts they participated in during the 1930s must be found. The two major wars the Italian army was committed to were the Italo-Ethiopian War and the Spanish Civil War. Both of these wars used armored and motorized forces working together in a combined arms effort to defeat the enemy. Both of these conflicts had large impacts on Italian armored, mechanized, and motorized development in their strategic and operational approach to warfare. To understand the impacts one must examine the actual campaigns and the lessons learned from them and how the Italian army applied them.

Benito Mussolini, who became the Fascist dictator of Italy on 30 October 1922, wanted to prove Italian arms and to create the Italian Empire for the glory of Italy and the Italian people. To do so Benito Mussolini and Italy would have to first acquire one of the last remaining independent areas of Africa. The country of Ethiopia was a large independent nation in the Horn of Africa and was bounded by two Italian colonies. The northern Italian colony was Eritrea. The southern Italian colony was Somalia. These two colonies would play a pivotal role in the upcoming campaign. The country of Ethiopia was under the Italian sphere of influence by treaty and by geographical position. Ethiopia offered Italy a natural outlet for her excess population, rich land for agriculture and was still available for expansion to meet Italy's economic and political interests.

Italy declared war on Ethiopia on the 3d of October 1935 based on an a border incident at Walwal in 1934. The Italian armies employed two separate strategic and operational concepts in the Ethiopian campaign. These were the advance in mass as illustrated by the campaign on the northern front and the advance in depth as illustrated in

the southern front. The Italian war in Ethiopia can be divided into four phases. These phases were conducted on two separate fronts and utilized two separate strategies for the Italian Armies committed to each front. The Italian army employed in Ethiopian was primarily an infantry force. To a great extent most of the formations and divisions were heavy infantry divisions similar to those employed in World War I. It was a force dominated by the logistical trains to support it and the distance and road network to and from their supply bases.

The northern front was the main effort of the Italian invasion of Ethiopia. Governor of Eritrea and General Emilio De Bono would be the initial commander of the Italian northern front. He had an army of 100,000 Italian soldiers, Blackshirts and colonial troops. This invasion originated in the Italian colony of Eritrea. From here the Italians had their largest armies and the main attack would commence in three separate but mutually supporting lines of attack. The southern front was to be a defensive battle to hold Italian Somalia from any Ethiopian offensive action against it. The Italian Army fighting on the northern front of operations was tied to very constrictive road networks through mountainous and hilly terrain. The operational distances were great for the invading armies based on the geographical area to be conquered.

The first phase of the fighting on the northern front was from October to December 1935. This was an advance in mass. The entire campaign in the north illustrates this principle. This initial phase was a march to contact with specific operational objectives for the invading Italian armies. Italian reconsolidation upon reaching their initial objectives marks the second phase. The northern Italian army did not have much motor transport and had long distances and lines of communication to

cover. The Italian Army of the North had to consolidate initial gains, and rectify deficiencies in supply and transport. During the second phase the Ethiopians counterattacked and the Italians held their positions against these counterattacks. The third phase was a general offense after their victories against the Ethiopians and after the Italians had been properly resupplied. Once again the armies operated in an advance in mass. The final phase was an exploitation phase, which came after the defeat of the Ethiopian armies in the field and ended with the capture of the strategic objective of the Ethiopian capital, Addis Ababa.

General Emilio De Bono's plan was to advance slowly into Ethiopia and in easily attainable stages. He built roads and supply bases before each successive offensive operation. In this way the Italian Army could retain its logistical base. It was necessary to do so because of the constraints of the territory and his primarily infantry-based army. This characterized the advance in mass and the issues that confronted an infantry based force of maneuver. Marshal Pietro Badoglio replaced him as commander in chief of the northern front on the 17th of December. This was due to the slowness of the advance and the international political climate at the time. He continued to utilize an advance in mass but not in slow motion state as before.

The Italian army on the Northern front used tanks and armored vehicles during the offensive and exploitation phases of their operations. This was due primarily to the fact that Italian existing doctrine called for the use of tanks during this phase and the terrain limited their combat effectiveness prior to that. Much of the terrain on the Northern front was not suitable for armor operations. When it was used it was used effectively in the roles it was intended for and that was offensive operations. The most

organized attempt at a combined arms operation on this front was when a mechanized column was organized for the final sweep into the capital of Ethiopia, Addis Ababa. General Badoglio organized a motorized infantry column, escorted by a squadron of tanks and three groups of motorized artillery for this part of the exploitation phase. It was titled "Colonna de ferra volonta"-the column of iron will. This column advanced toward the capital and with two Italian corps securing its flanks. This was the first real use of a motorized column on the Northern front of operations and came only after the near total collapse of Ethiopian resistance.

Marshal Rodolfo Graziani, a veteran of World War I and Italy's colonial campaigns in Libya applied a new motorized doctrine developed on his limited forces and the nature of the terrain and geography of the southern front for his victories in the Italo-Ethiopian War. He was the commander of the southern front based in Italian Somalia. Initially he was only tasked with the defense of Somalia from Ethiopian offensive action. "He had 500 miles of frontier, and with only 60,000 troops for all his commitments, it was expected that Marshal Rodolfo Graziani's operations could not be either on the same scale or so extensive as those of General Emilio De Bono or his successor Marshall Pietro Badoglio on the northern front" (Baker 1968, 174). This was a defensive holding action for the entire theater of operations. Limited actions to secure disputed border cities and strategic locations along the border were to be the only actions undertaken from Italian Somalia.

Graziani was not happy with a secondary role during the initial phases of the Ethiopian campaign. "On his own initiative, therefore using money from the Colonial Ministry of War , he began buying trucks and caterpillar diesels directly from the United

States, and importing petrol from South Africa, India and even Japan, in preparation for a possible offensive" (Mocker 1984, 53). He soon was developing the potential for a motorized offensive force to attack from the south into Ethiopian. This would give strategic advantage to the Italian armies by having the Ethiopians fighting on two fronts.

Graziani organized his forces into motorized columns supported by infantry for the offensive actions he planned on the southern front. Once he had built up his forces sufficiently and gained the motorization needed he conducted offensive operations in three phases. He organized his attacking forces into motorized columns to travel the great distances the terrain and desert presented him. The terrain he would be fighting over consisted of the Ogden Desert. Here he had ideal terrain to launch mobile columns to travel great distances with speed. The Italian offensive was characterized by advances, maneuver and outflanking with lulls to reorganize and consolidate, and then a continued advance. The first lull was due to weather conditions and flooding of rivers at critical crossing points. The real success of Italian armored and motorized forces was in the operational use of mobile forces supported by infantry. Here is seen a combined force of armor, motorized infantry, and motorized artillery being employed in an advance in depth. This advance in depth was characterized by combined arms teams centered on the tank.

Graziani was aided by his able subordinates, Colonel Luigi Frusci and Colonel Pietro Maletti, for the first offensive phase. Both of these officers commanded columns on the southern front. Each of these officers would become generals and play a pivotal role in Italy's first successful use of combined arms teams in World War II. These two combined arms columns spearheaded the attack across the Ogden desert. The first

offensive phase on this front was securing the border towns with infantry forces and strategic locations with two motorized columns in the offense.

"General Frusci prepared an operation on a large scale, using all his six Arab-Somali battalions, 150 lorries, 9 tanks and 20 armored cars" (Mocker 1984, 69). He successfully advanced to his objective of Gorrahei on 7 November 1935 which the Ethiopians abandoned, and immediately advanced another 81 miles, capturing the enemy rearguard as it retreated. He was stopped at the flooded river of Tug Fafan and a force of large well armed Ethiopians. He then decided to return to the city of Gorrahei because his front was blocked. Maletti's column also advanced but was ambushed and lost three tanks. It was a stalemate with both sides retreating thirty miles from the battlefield to reconsolidate. The forces were stopped due to the mud and floods from heavy rains. Thus the initial use of the motorized columns succeeded but had to stop due to enemy presence, climatic conditions and the price of learning their capabilities under battlefield conditions. This began the second phase of reconsolidation to prepare for the third offensive phase.

The third offensive phase for the southern front had the objective of Harar and it was titled the battle of maneuver. This third offensive phase began in April of 1936. The Italians used motorized columns, supported by infantry. The Ethiopians were defending strong points and maneuvered their forces on foot. Three motorized columns consisting of combined arms teams followed by infantry forces struck from the Italian forward bases in the Ogden.

The attack included the use of a motorized force to cut off and outflank the fortified position of Sasabeneh instead of using an infantry frontal assault. The main

battle for the region was fought between the largest Ethiopian force and General Guglielmo Nasi, commander of the Libyan Division. The Ethiopians decided to attack at the same time the Italians advanced on three separate axes of advance. The middle Italian column, a divisional sized element, met the Ethiopian attack of some 10,000 soldiers. A three day battle ensued with two motorized forces from this column encircling the enemy rear, and the Ethiopians had to flee the battlefield. The Italian columns were successful and were able to outflank all the main defensive positions, and defeat the main Ethiopian army in the south. They captured Dagghabur, the capital of the Ogden.

This portion of the campaign had been a week of maneuver and victory for the Italians on the southern front utilizing motorized columns supported by infantry formations. The successful use of these motorized formations and the cooperation of the infantry divisions in pincer-type movements made it possible for the armies to move forward and capture Harar on 9 May 1936, ending the campaign in the south. This victory coincided with the fall of Addis Ababa and the conclusion of the Italo-Ethiopian war.

Marshal Rodolfo Graziani was able to move his smaller, completely motorized forces cross-country, which was the key to this front's success. The only concern he had was with the current Italian L.3 tanks, which he considered to be extremely unreliable. Their performance did not live up to expectations. They were mechanically unreliable, fragile in combat, and had to have the close support of the infantry to survive on the battlefield. "Even the progressive General Graziani restricted them to close cooperation

with the infantry attacks. He decided they were too delicate to be used for reconnaissance or spearheading assaults" (Sullivian 1984, 560).

The Italian armies utilized armor, motorized infantry, and artillery forces in the Italo-Ethiopian war. The armored forces were highly publicized at the time to show the modern capabilities of the Italian army. The armored units committed in the war employed both the new L.3 lights tanks and the Fiat 3000 Medium tanks. The new L.3 light tanks were being sent to the different fronts as soon they were being produced on the assembly lines. These L.3 tanks were inexpensive to produce and were based on the need for Italy to fight in the northern restrictive frontiers of Italy. The only loss of more then one tank at a time on the northern front was in December 1935 (Fiske 1936). Not withstanding Graziani's concerns, the use of the L.3 tank proved to the Italian high command that their investment in the L.3 tank was correct due to the low loses incurred in the campaign.

This major loss occurred at the Dembeguina Pass, near Adowa. Here an Italian platoon of six L.3 light tanks became cut off from their supporting Italian infantry. These Italian tanks were in a pass in which they were not able to maneuver or use their superior speed when attempting to reach the main Italian column. Ethiopian forces used the advantage of the terrain to destroy them individually, first immobilizing them from behind by prying off their tracks and then destroying them. On the southern front the Italians lost three tanks in Maletti's column during the first offensive phase due to ambush. Once the Italian forces organized combined arms columns they were highly successful in their employment of their light armored forces.

Two major impacts on the Italian Army from the war in Ethiopian were the creation of the binary division and an initiative for motorization throughout the Italian Army. These reforms were based on the how the war was fought on the northern front with its narrow lines of communication and constricted road network. Accordingly, the Italian army experimented with binary divisions. These were divisions consisting of only two infantry regiments instead of the traditional three regiments. In the Ethiopian campaign, facing an enemy with different and lesser capabilities, these divisions were able to maneuver with some speed and defend themselves.

It was thought that the next war for Italy would be fought in conditions similar to this in the Italian Alps. "General Pariani, Italian Chief of Staff, added his own organizational revolution, conversion of the three regiment divisions into two regiment 'binary' divisions, which by doctrine were to supposed to be capable of frontal attack" (Knox n.d., 313). This initiative would have far reaching consequences for the Italian Army in World War II and it was based on the performance of the binary division in the Italo-Ethiopian war.

For armored and motorized forces the main lesson learned from the Italo-Ethiopian war was for an increase of motor vehicles to support the maneuver elements of the Army. The motor transport was necessary for logistics and to transport soldiers to the front or in combat operations. Also noted was the increase of armored units to support these new mobile columns and provide the necessary firepower and strength to defeat the enemy. The Italian army could not be fully dependent on traditional means of maneuver and mass. This traditional form of maneuver, tying their infantry based formations to existing road networks and maneuvering the army based on mass, did not prove to be the

extremely efficient process to concluding a war in a timely manner. Italy's goal for future conflict would be to achieve victory in the shortest time available.

If Italy was to be victorious in the next war, she must fight a war of short duration because of economic and geographic considerations. The impact of transporting supplies and personnel rapidly proved the idea of total motorization of the Italian Army and to give it the ability to maneuver rapidly against the enemy. The principle of rapid movement and totally motorizing the Italian army led to a motorized corps being formed and committed to the Spanish Civil War.

On 16 August 1936, two months after the beginning of the Spanish Civil war, the first Italian ground forces arrived in Spain to support the Nationalist forces of General Fransco Franco. These forces arrived in September 1936. The first group of Italian volunteers consisted of artillery men and tank crewman. These volunteers were Italian soldiers from the Italian regular army who resigned their status to volunteer and fight in the Spanish Civil War. These were two areas in which the Spanish Nationalists were extremely weak during the opening stages of the conflict. The initial Italian volunteers were instructors for the Nationalist forces and they brought L.3 tanks and artillery with them to support this effort.

From this base of instructors were formed the first small Italian units that eventually grew into a force of four Italian divisions. The first tank unit to go to Spain was the *Carri d'assalto*, with L.3 tanks. A motorized *Corpo di Truppe Voluntaria* was formed from these elements in Spain. This unit consisted of the *Littorio* infantry division and one battalion of L.3 tanks. This highly motorized force combined armor, motorized infantry and motorized artillery to fight a war of rapid maneuver. This was done

intentionally, and they had much more trucks and armor than the rest of the Italian Army did at the time. This Italian motorized force would be the testing ground for the mechanization of the Italian Army.

On 7 February 1937 Nationalist and Italian troops captured Malaga. This was due to the light, scattered and thinly scattered Republican defenses of Malaga. This made perfect conditions for a motorized force to operate. "The Italian forces wanted a guerra celere (rapid strike) attack by their motorized columns" (Preston 1994, 217). General Francisco Franco wanted to use the available Italian forces for the battle of Madrid to help bolster the Spanish nationalist forces but allowed them to develop their plan based on Benito Mussolini's desires for an Italian operation and victory. The Italian motorized forces with some Nationalist forces drove on Malaga and were very successful in the rapid operation and employment of their motorized elements. This operation was the real Italian motorized success of the Spanish Civil war where they operated in same operational sense as in the Ethiopian War. The force was commend by General M. Roatta.

In April 1937 the first battle in which Italian tanks were engaged under an Italian command occurred. This was the battle of Starda di Francia. An Italian motorized column with tanks attacked along the road from Guadalajara to Madrid. This force was defeated by the Republicans. The Italians used the tanks in the infantry support role and not as an independent arm. At the time of this battle there were sixty tanks in the *Raggruppamento Carristi of the Corpo di Truppe Voluntaria.* This *Raggruppomento* consisted of the tanks intially sent to Spain and the Carri d'assalto. This was the major tank battle for the Italian tanks in 1937 and the Italians forces learned valuable lessons

from the engagement. The *Corpo di Truppe Voluntaria* would continue to fight to the end of the Spanish Civil War.

The main lessons learned from Spain were antitank doctrine, the need for a heavier tank, the development of an Italian armored division and armored corps for the tank to be used in an independent role, and the necessary continuation of the motorization of the Italian Army. The L.3 tanks pitted against Russian tanks armed with forty-five millimeter guns in turrets, and against antitank gun defenses, showed the inherent weakness of the L.3 tanks against contemporary armor and antitank guns. To compensate for their lack of a main gun, L.3 tanks and trucks would pull antitank guns behind them or in portee into battle and then use them to engage enemy armor. Captured Russian tanks were also utilized by Italian forces to compensate for their lack of a medium tank. This proved to the Italian army that a heavier armored and gunned vehicle would have to be developed to support its maneuver forces. This would prove to be a challenge to the industrial capability of Italy to test, produce and field for the Italian military.

The Italian Army learned that it needed to develop an antitank doctrine. This doctrine allowed antitank guns to work with the infantry and armor forces to defeat enemy armor threats. A combined force of infantry and antitank guns could stop an enemy armor threat and gave the infantry the ability to defeat enemy armor. This was the answer to how the infantry could survive and defeat armored forces.

The success of the Italian combined arms motorized columns here and in Ethiopia proved the concept of motorized forces and the natural follow-on of mechanization. All the recommendations and lessons learned pointed to the use of more tanks and in more

independent roles (Ceva and Curami 1989). This in turn generated the need for mechanization instead of motorization. The tank was becoming the principal Italian weapon system on the battlefield and losing the supportive role that it had prior. That role had been to support the infantry in a subservient relationship. So the Italian army turned away from motorization of it its army and turned to mechanization of its army. To achieve these goals a new doctrine and policy would have to be developed. The Italian Army developed a new armored and motorized doctrine in 1938-1939 to fit their new operational art of war. It was the War of Rapid Decision.

This doctrine involved a fast moving offensive warfare employing armored, motorized, airborne and regular forces task organized in combined arms teams. The doctrine of the War of Rapid Decision can be defined as the use of

> Celere (fast moving) divisions designed for exploitation and reconnaissance, Tank regiments, designed for penetration, encirclement, and exploitation, and Motorized divisions, designed for rapid maneuver over a wide range and for the reinforcement of mechanized or Celere units.
>
> The basic factors for successful employment of this doctrine were surprise, speed, and intensity, sustained action, and flexibility of the plan to allow for unseen contingencies.
>
> The Italian principles of employment of their doctrine are based on increased firepower within their unit formations. Opposition to hostile fires by combined arms fires and movement. Mass and fires against the enemies point of least resistance to achieve rapid penetration and subsequent flanking movements. Combined fires and movement to neutralize the enemy efforts. Independent and flexibility of command (Military Intelligence Service 1943, 401-402).

The Italian Army would now maneuver against the flank of the enemy rather then attack in mass against his front. Exploitation by motorized forces would follow the maximum use of mass to break the enemy lines. Mechanized and airborne forces would become important aspects of the new Italian Army doctrine. This was comparable to the standard blitzkrieg, as established by the Germans. The Italian Army in their strategic

planning was focused on a war of maneuver on the French, Austrian, or Yugoslavian approaches and the terrain associated with it. The Piedmont exercises of 1938 convinced the Italian high command they could defeat any threat to the northern passes. This new doctrine was needed to be able to exploit the success of the enemy's defeat or allow Italian offensive action against her enemies (Geibel n.d., 11).

To facilitate this new doctrine the Italian army needed fast, mobile and maneuverable formations to give them the advantages of speed and maneuver. These units were the Celere, Motorized and Armored formations of the Italian Army. Italy formed three Celere divisions. These three divisions were the 1st *Eugene Di Savona*, 2nd *Emanuele Filiberto Testa di Ferro*, and 3rd *Amedeo Duca D'Aosta*. The Celere divisions were each composed of one regiment of cavalry, one regiment of Bersaglieri (motorized light infantry), one regiment of motorized artillery, one armored company, and supporting services. Celere (fast moving) divisions were designed for exploitation and reconnaissance. The Celeri was an attempt to adapt the legendary élan of the cavalry and light infantry (Bersaglieri) to modern war by creating a synthesis that would allow it to operate in the situation Italy could expect find itself in the next war (Sweet 1980, 82). The three celere divisions were located in northern Italy in 1939 and 1940. Numerous independent celere formations also existed in the Italian Army at the company, battalion and regimental levels.

Based on the success of motorized columns of artillery, infantry and armor working together, the Italian army decided to form its first true armored divisions. The "*Littorio*" was the first Italian Armored division formed. It was formed on the cadre of

the veterans of the *Littorio* Infantry Division from the Spanish Civil War who utilized a motorized concept in Spain. It consisted of an armored regiment, motorized *Bersaglieri* infantry regiment, and a motorized artillery regiment. It was task-organized to fight in a combined arms manner. To continue the close cooperation of infantry and armor, one motorized division consisting of two motorized infantry regiments was formed to work in conjunction with one armored division. These two types of divisions, one armored, and one motorized, would form an armored corps to support one Italian field army. Three of the four existing Italian tank regiments would be the base for the new armored divisions, which were all formed in 1939. Only two motorized divisions were raised due to a shortage of trucks.

The first three armored divisions were the 131st *Littorio*, 132nd *Ariete*, and the 133rd *Centauro*. Each of the armored divisions had one armored regiment, one Bersaglieri Regiment, one motorized artillery regiment, and supporting services. These armored divisions constituted the heart of the new Italain doctrine. Their role was penetration, encirclement, and exploitation. This gave the tank units the independent role they desired and became the decisive force on the battlefield utilizing a combined arms doctrine. A new regulation issued on the 1st of December 1938, the circular *Impiego delle unita' carriste,* projected the construction of the M (medium) and P (Heavy) tanks. In December 1938 the first two armored divisions were formed, starting from the existing armored brigades *Ariete* and *Centauro*. Two of the three armored divisions were in Northern Italy and one armored division was in Albania in 1939 and in 1940. Numerous independent armored formations also existed in the Italian Army at the company, battalion and regimental level.

The two initial motorized divisions were the 101st *Treiste* and 102nd *Trento*. Each of the motorized divisions had two motorized infantry regiments, one Bersaglieri Regiment, one motorized artillery regiment, and supporting services. They had three regiments of infantry making them the most powerful infantry formations in the Italian Army. Their role was rapid maneuver over a wide range of territory and the reinforcement of mechanized or Celere units. This gave the armored units added infantry support to provide flexibility and maneuverability on the battlefield. Both of these motorized divisions were located in northern Italy along with the two armored divisions in 1939 and 1940. Numerous independent motorized formations also existed in the Italain Army at the company, battalion, and regimental levels.

With the creation of the new doctrine the tank formations at battalion level and below had to develop new tactical employment doctrine to support the new from of warfare. No longer were the tanks acting as support weapons to the infantry but were an independent but combined arms force. At the tactical level of operations tank battalions trained to attack in company wave formations. These wave formations would attack on a frontage of 400 meters or two companies abreast utilizing a 1,000-meter front. The other tank companies would be following or in the reserve. The Italian tank battalions had four separate formations they could employ with modifications based on the tactical situation. The column formation was used for traveling tactically. For situations of uncertainty the "V" formation was used. This tactical formation gave the commander a compromise between control of the formation and firepower. If the commander wanted have maximum firepower on line he would utilize the line abreast formation. If the tank

battalions or companies found themselves on the extreme right or left flank of the formation they could utilize the echelon right or left formation. This would provide protection of an extreme flank. "As the fighting developed in North Africa the preferred formation was a modified line abreast. This formation had each flank slightly refused to protect the flanks of the formation" (Pignato and Simula n.d., 171).

During the maneuvers of 1939, the Italian Army of the Po utilized the new doctrine of the War of Rapid Decision. The entire Italian armored corps (*Corpo d'Armata Corazzato*) consisting of two armored and two motorized divisions were active in training in Italy during 1939. This was the last major pre-war maneuver for the Italian Army. This maneuver was fought in the terrain of Northern Italy where the Italian Army felt the next war would be fought. The narrow focus of the motorized elements of the training was on the armored division Littorio. The Italian armored corps would attack south from the valley of the Po into the Apennines. For most of the time they engaged in combat and maneuver they would be utilizing the mountain valleys.

The most drastic lesson learned from these maneuvers was to reaffirm that the L.3 main battle tank was inadequate. The tank battalion, the main striking force of the division, had inadequate power (Sweet 1980, 171). The M.11 tank would be the first medium tank developed based on this new requirement. When this tank was designed it was with on par with contemporary designs in other nations. It reinforced the lessons learned from the Spanish Civil War regarding the need for more armor and firepower. The M.11 tanks made their first showing in the 1939 maneuvers manned by technicians form the Fiat Ansaldo factory. This was the breakthrough tank for the Italian Army. But,

the majority of the armored vehicles actually involved in the 1939 exercise were Fiat 3000 medium and L.3 light tanks which still equipped the majority of Italian armored formations.

Fascist Italy had decided on a new operational doctrine, utilized and tested in the army maneuvers of 1939, which was meant to achieve their strategic goals. This new doctrine of the War of Rapid Decision gave mechanization and the armored forces the pivotal role on the future battlefield. Italy was prepared to fight her enemies with these new forces in northern Italy and to a lesser extent in her colonial possessions. First priority of forces went to the theater of operation that posed the greatest threat to the Italian Empire. In the eighteen months before Italy's entry into World War II, Italy tried to implement the doctrine of the War of Rapid Decision. Italy, a noncombatant during the fall of 1939 and the spring of 1940 was intellectually better prepared than most countries that entered World War II. This was based on the newly developed doctrine that had evolved in the course of the 1930s and her combat experiences. Fascist Italy had the resources and material to attain one strategic goal if it committed its main effort to achieving this goal. An area in which they had a tremendous amount of power and the ability to influence this was in the colony of Italian Libya in North Africa.

CHAPTER 3

SETTING THE STAGE

Fascist Italy and the uncertainties of her foreign policy hindered the formulation of an overall strategic plan for North Africa in the period 1937 to 1938. The governor of Libya, Air Marshal Italo Balbo and the Army Chief of Staff, Marshal Alberto Pariani, had directed a course of action against Egypt during this period of planning, if war should arise with Great Britain or France. Marshal Pariani envisioned and planned an invasion with thirteen Italian divisions attacking into Egypt securing it for the Italian Empire. The grand strategic prize being the Suez Canal. Since war broke out in September 1939 and Italy did not enter immediately as an ally of Germany, a defensive mentality prevailed in the fall of 1939 and winter of 1940. This was because Fascist Italy and her leaders waited the outcome of the war between Germany and Great Britain and France to decide what course of action to take.

When Benito Mussolini did declare war on 10 June 1940 he did so understanding the strategic implications of this act. He intended to have Italy in a grand strategic position of power from a short duration war with Great Britain and France. From this position of power he could talk with strength at the peace tables to gain concessions from the defeated enemies. Fascist Italy had the resources and material to impact one strategic goal if they committed their main effort to achieving this goal. This was due to the limited resources and material at her disposal and her dependence on critical imports to fuel her industry. Libya was one place where Italy could attain significant gains.

The Italian Army In North Africa consisted of two distinct armies under one overall command structure. The two Italian armies in Libya were the 5th and 10th Italian

Armies. The 5th Italian Army was oriented toward the French colony of Tunisia centered on Tripoli. The 10th Italian Army was orientated against the British in Egypt centered on the towns of Tobruk and Bardia. Originally at the outset of the war the Italian forces were almost equally divided between the 5th and 10th Italian armies. The Italian 5th Army had three corps consisting of eight divisions. The Italian 10th Army had three corps consisting of six divisions. The strength of these armies was rather impressive when one looks at the numbers of material, resources and personnel at their disposal.

On 10 June 1940 there were 221,530 Italian and native troops in Libya. These troops were organized into 14 infantry divisions and numerous smaller formations. These forces were armed with 339 armored vehicles, 306 aircraft of all types, 1427 artillery pieces and 8039 motor vehicles (Montanari 1990, 463-466). This Italian force was in a position, but not with overwhelming force, to strike either to the west against French North Africa or east against the British in Egypt. The Italian Army in North Africa consisted primarily of nonmotorized infantry divisions but had the ability and resources to fully motorize some of their formations and combine them with the existing armor in the theater of operations to form a motorized force centered on the armor available to them.

The basic make up the armies consisted of three types of infantry divisions and a number of light armored battalions. They had very few motorized infantry formations within their existing structures. Most of the available transport was used for limited motorization and logistics. The armored forces available consisted of L.3 tanks. The divisions consisted of three distinct types. These types were the regular Italian Army formations, Blackshirt (*Camicie Nere*) formations and Libyan formations. The basic

structure of each division was the same, but equipment, training, and readiness was different in each type of formation.

The Italian regular infantry divisions (this has also been called the "metropolitan" Division meaning the soldiers and personal are from one of the provinces of Italy) represented the professional and regular military establishment, which set the standard for all other Italian military organizations. In a decision based on the Italian experience gained during the Ethiopian campaign all infantry divisions were to be based on a binary design. This means that each division would have two regiments instead of the typical three-regiment structure found in most European armies of the period. This change allowed for an increase in the total number of divisions in the Italian Army. The binary concept was tactically sound for Northern Italy. Though it increased the amount of divisions it seriously reduced the manpower, strength, and support services of each division.

The change from going from a ternary to a binary division structured affected a critical area for the Italian divisions and that was logistical support. Critical to any war of maneuver are the logistical support services. Without these support services organizations could not travel for long distances as required in the desert environment. The support services in binary divisions were reduced and the nonmotorized divisions had to rely on road networks and horses for sustainment operations. In North Africa was found the ideal environment for maneuver warfare. The terrain, climate, and conditions varied but the initial Italian formations were designed to fight in constricted mountainous terrain of northern Italy. So in reality the strength of the raw numbers of personnel and equipment were not to their advantage in North Africa and the desert campaign to follow.

The Regular Italian Army formations were the most numerous in Libya. There were nine Italian Infantry divisions in Libya on 10 June 1940. These divisions were the 17th Pavia, 25th Bologna, 27th Brescia, 55th Savona, 60th Sabratha, 61st Sirte, 62nd Marmaricia, 63rd Cirene, and 64th Catanzaro. The 5th Italian Army had six of these divisions, the 17th, 25th, 27th, 55th, 60th, and 61st, in two separate corps, the XX, and X. The Italian 10th Army had three of these divisions, 62nd, 63rd, and 64th in two separate corps, the XXI and XXII. The training level and readiness of the Italian army divisions was not equal across the scope and depth of the formations. The divisions in the Italian 10th Army were the most recently formed and lack the necessary depth in training. Only two of these divisions would have a major role in the invasion of Egypt in September of 1940.

The Blackshirt (*Camicie Nere*) Infantry Divisions contributed three divisions to the Italian order of battle in North Africa. The *Camicie Nere* (CCNN) was composed of Fascist volunteers and was originally the militia for the Italian Fascist Party. On 1 February 1923 the Fascist militia was institutionalized by Royal Decree soon after Benito Mussolini and the Fascist party gained power in Italy. At this point we have the start of the actual legalized participation and integration of the CCNN into the Royal Italian Army. Prior to this it was purely the military arm of the Italian Fascist party. It would be used as a separate branch in all future military operations and campaigns the Italian army participated in. The North Africa campaign would see the largest independent CCNN formations employed during the entire war.

The CCNN division of World War II had two legions. It is important to understand the size of the units we are referring to, especially the Legion. "The legion

was the basic unit of the CCNN, corresponding to the army's regiment and was based on the a triad organization of three cohorts, each cohort divided into three centuries, the century into three maniples, each formed by three squads. The whole organization was modeled upon the ancient Roman Army, commanded by men with Roman rank titles" (Rosignoli 1995, 11).

In 1939 four new infantry divisions were formed for service in North Africa to replace the Blackshirt divisions that were used during the Ethiopia campaign. "They were named 'Libyan' Blackshirt Divisions" (Trye 1995, 51). CCNN formations were to be only built from Italian Fascist volunteers. Due to the enormous drain of resources and personnel caused by the Ethiopian and Spanish wars one third of the CCNN troops were not Fascist militia volunteers. They were actually soldiers recalled to active duty from Army classes not being utilized by the Regular Army. The training readiness of the Blackshirt formations was not on par with the regular Italian formations in North Africa due to being recently formed and current readiness due to training.

The four Libyan CCNN divisions that were deployed to North Africa, had the names 23 Marzo, 28 Ottobre, 21 Aprile, and 3 Gennaio. These divisions were named after famous dates in Fascist history. Benito Mussolini felt that purely Fascist units and organizations would be superior on the battlefield due to their political motivation to the Fascist cause. The divisions were mobilized in September 1939, and they were immediately sent to Libya and were incorporated into two Army Corps upon arriving.

These Army Corps were the XXII CCNN Corps, commanded by general Uberto Somma and XXIII CCNN Corps, commanded by General Mario Berti. These two separate corps was assigned, respectively to, the Italian 5th Army, and the other in the

Italian 10th Army. The Army Corps assigned to the 5th Army had two Blackshirt divisions assigned to the XXIII Corps. The XXII Corps was assigned to the 10th Army and had one Regular Army division, and one Blackshirt division in it.

In May 1940 the 21 April Libyan CCNN division was disbanded and its Blackshirt personnel were used to strengthen the other three Blackshirt divisions. This was due to the fact that they were not manned to their full strength for personnel. The army personnel (which made up most of the supporting services) were used to help form the 64th Catanzaro Infantry division for the same reasons. This reorganization started in May 1940 was not yet finished as of June 1940.

One could consider that "as late as the 1st of June the CCNN divisions in North Africa were still considered incomplete" (Montanari 1993, 535). From this reorganization only one battalion survived from the 21 Aprile Libyan CCNN division. This battalion was the 81st CNNN and it was absorbed into the 3 Gennaio CCNN division. The 154th CCNN battalion was disbanded and replaced by the 81st CCNN battalion. So the structure remained the same for the three reaming CCNN Blackshirt divisions in North Africa. Due to the reorganizations and lack of training these formations were not the best Italian formations in Libya.

Additional CCNN formations were raised from within the colony of Libya itself. These formations were independent town or city legions. Four Black Shirts battalions were raised from the legions of the towns of Tripoli (1st CCNN battalion), Misratah (2nd CCNN battalion), Benghazi (3rd CCNN battalion) and Derna (4th CCNN battalion). "All four took part in fighting on the North Africa front during World War II and suffered the fate of virtually all the Fascist Militia units there--destruction or capture" (Trye 1995,

52). The individual town legions were not well trained or organized. From these town legions an outstanding volunteer battalion would be formed in late 1940 to serve in the defense of Tobruk.

This battalion was the Volontari della Libia. It is not clear when the Volontari della Libia Battalion was formed in Tobruk. It probably occurred during the second half of December 1940, when the commonwealth victories created the need to put everything battle worthy in line. While the town legions were virtually useless, the Volontari della Libia battalion was formed with the best elements and some young volunteers coming from the colonist present in Cirenaica. It fought well during the fall of Tobruk in January 1941 and was captured at the surrender of the port city.

These were the major Italian CCNN formations that existed in June 1940 or were formed during the initial campaign in Libya. Other Italian CCNN formations were to serve during the course of the entire campaign for North Africa but were not present to influence the campaign of 1940 in Libya. Even though these formations were not the best Italian formations in Libya, these Italian CCNN formations would play a major role in the initial Italian invasion into Egypt.

In addition to the ethnic Italian forces, there were Libyan forces in the Italian order of battle. In January 1914 the Libyan formations were formed into the *Corpo di truppe Coloniali per la Tripolitania* and the *Corpo di Truppe Coloniali per la Cirenaica*. This would not change until 1935. The Royal Corps of Libyan Colonial Troops was established by royal decree in September 1935. "The previous independent colonial forces of Tripolitania and Cirenaica were abolished and single corps substituted by the formation of this new organization" (General Staff War Office 1939, 165b). This

organization comprising the native Libyans would go through a number of changes in 1937 and once again in 1939.

"In 1939 some Libyans had been granted special (though limited) Italian citizenship by Royal Decree No. 70 on 9th of January 1939. This citizenship was necessary for any Libyan with ambitions to rise in the military or civil organizations. The recipients were officially referred to as Moslem Italians. Libya had become the fourth shore of Italy"(Trye 1998). The incorporation of Libya into the Italian Empire gave the Italian Army a greater ability to exploit native Libyans for military service. Native Libyans served in Italian formations from the beginning of the Italian occupation of Libya.

On the first of March 1940 the 1st and 2nd Libyan Divisions were formed. These Libyan Infantry divisions were organized along the lines of the binary Italian infantry division. The 5th Italian Army received the 2nd Libyan Infantry division which it incorporated into the XIII corps. The Italian 10th Army received the 1st Libyan Infantry Division which it incorporated into the reserve.

The Italian Libyan infantry divisions were colonial formations. In this sense the meaning of the word "colonial" means native troops. These formations had Italian officers commanding them with Libyan NCOs and soldiers. Their equipment was older in the supporting services, artillery, and machine guns, but the rest was on par with the average Italian regular formation. These native Libyan formations were made up from the coastal Libyan populations. The training and readiness of these divisions was on equal footing with the regular Italian formations in North Africa. They had a professionalism and espirt de corps, making them some of the best Italian infantry

formations in North Africa. The Libyan divisions were loyal to Italy and provided a good combat record.

In addition to the traditional infantry formations the Libyans would form other special purpose units. The Libyan Parachute regiment consisting of two battalions in 1940 was a unique form of warfare available to Italian forces in North Africa. At the beginning of 1938, Air Marshal Balbo formed the first Italian Parachute unit. This parachute unit was the Battalion *Alliewvi Paracadutisti Fanti dell'Aria.* In March 1938 it started training with 300 Italian and Libyan volunteers. In June of 1940 it consisted of two airborne battalions, the 1st *Alliewvi Paracadutisti Fanti dell'Aria and the 1st National Parachute Battalion of Libya.* This formation gave the Italian Army a unique airborne capability at the regimental level.

A number of independent Libyan coastal formations were raised for coastal and city defense of the colony. These formations were infantry battalions and artillery battalions. They were situated normally to defend strategic locations on the Libyan coast. The combat value of these forces to maneuver warfare was limited as they were designed for positional warfare.

These were the major Italian Libyan formations that existed in June 1940 or were formed during the initial campaign in Libya. Other Italian Libyan formations were to serve during the course of the entire campaign for North Africa but were not present to influence the campaign of 1940 in Libya. These Italian Libyan formations would play a major role in the initial Italian invasion into Egypt. Most notable were the motorized *Raggruppamento.*

Maletti's *Raggruppamento* was formed on 8 July 1940 in the city of Derna in Libya. This was the primary motorized formation available to the Italian 10th army. It had motorized infantry battalions and an armor element when initially formed. The motorized infantry battalions consisted of seven Libyan battalions. The armor element consisted of one Medium tank company, M.11 tanks, and one light tank, L.3, company. The supporting services consisted of motorized artillery and logistics. The armored element would later be raised to a medium armored battalion, solely comprising M.11 tanks. This in a sense was the first true combined arms formation among the Italian forces in North Africa.

The Italian Army employed a number of light armored battalions in Libya. The Italian Army in North Africa had 6 light armored battalions and numerous companies available to it in June of 1940. These forces were assigned to the corps and divisional level to support the infantry formations. Italy was one of the first countries to recognize the strength of armored formations. Italy developed a light three-ton tank in the early 1930 to support the use of a fast and maneuverable armored vehicle. This tank was the L.3. These L.3 tanks were light two man tanks which were thinly armored and had only two 8-millimeter machine guns as their armament. The initial strength in armored forces in Libya consisted of 339 armored vehicles. The majority of these armored forces were L.3 tanks and armored cars. They had 322 L.3 tanks and 17 armored cars in their armies.

Additional light and medium armored battalions would be introduced into the theater of operations as the campaign continued. These included the first-generation M.11 tank, and the second-generation M.13 tank. The M.11 tank was to be the spearhead of the Army's renewed advance and new doctrine. The M.11 tank mounted one 37-

millimeter gun in the hull with limited traverse and two 8-millimeter machine guns in the turret. The tank weighed eleven tons, and had frontal armor of only 30-millimeters. This frontal armor was not sufficient to stop the penetration of the two pounder British antitank gun. The M.13 tank, a second-generation tank designed in 1938, was a sufficient medium tank design for the period. The M.13 mounted a 47-millimeter gun in the turret and two 8-millimeter machine guns in the hull. It weighed 13 tons and had frontal armor of 40-millimeters. These medium tanks would give the Italian army the capability to deal with the British light and medium tank threat they faced.

Italian artillery was to play a major role in the Italian formations in North Africa supporting the maneuver forces both motorized and nonmotorized. Artillery is a supporting service but a key to combined arms warfare. Most of the artillery in Libya was motorized and within all the divisions the artillery was motorized. Those Italian artillery pieces not motorized were in fixed gun emplacements in forts and along the coast. The best-trained personnel in the Italian Army were assigned to this branch. This was due to the technical skills required in the art of applying fires and the science of indirect fires. Due to these necessary skills, this branch of the Italian army received the best-educated soldiers from the yearly classes called to the colors. It was the best and best trained combat arms branch in the Italian Army and would prove its ability to fight and deliver fires on the battlefield in numerous engagements and battles.

The Italian artillery did have its own unique problems. The Italians had over 54 different artillery types when the war was declared. This hampered logistical efforts to resupply and maintain the vast variety of artillery systems. Most of the Italian artillery was of World War I vintage. Since Italy had limited resources she had to operate within

that framework. Italy overcame these shortfalls by expanding the life cycle of the older systems by developing new ammunition and having modernization programs for their artillery systems. This was due to the fact that the money and resources designated for building the new Italian artillery systems were used instead in the Ethiopian and Spanish Wars. Italy had just begun its new rearmament program when war was declared and only limited numbers of new artillery systems were available to the units in the field.

The *Guardia a Frontieri* (GAF) were the frontier Guards. These troops were found in all Italian border areas, both European and colonial. The GAF was organized into special corps in 1939. At this time it was made responsible for the defense of the frontier districts and fortress locations. These formations were given supporting arms and freedom of independent action. Their primary role was that of a covering force for the main Italian armies in the time of war and protection of the frontiers in peacetime. The GAF in Libya had formations on both the Tunisia and Egyptian frontiers and in the fortress cites of Tobruk and Bardia.

The Italian air force in Libya was considerably larger than the British air force in Egypt. This large force of 306 aircraft of all types (fighter, bomber, ground attack, and reconnaissance) was matched against 205 British aircraft of all types across the entire Middle East. "This force gave the Italian fighters a superiority in numbers over the RAF between two and three to one" (Shores 1969, 14). The 4th Stormo (a fighter squadron) was considered an elite unit. It had a number of outstanding pilots and aces from the Spanish Civil War assigned to it and the commander had over 19 kills to his credit.

The aircraft flown by the Italian Air Force were superior to the initial British aircraft in the Middle East. The main fighters where the CR.32 and CR.42 fighter planes.

Both types of fighters were biplane designs. These aircraft performed well and handled excellently against modern Russian aircraft in the Spanish Civil War and against contemporary British Gladiator fighters in the Middle East. The CR. 42 fighter was the best fighter in the western desert when hostilities erupted. In fact, the CR. 42 was the best biplane fighter produced in the world. The biplane fighters would be replaced by more modern monowing designs as the campaign progressed. The main medium bomber was the SM.79 tri-motor bomber that was an excellent bomber overall. The ground attack aircraft was the BA.65, which proved to be too heavy and slow for its intended role on the battlefield.

The Italian Air Force was superior in numbers, combat-trained crews and aircraft at the opening of hostilities in June of 1940. These Italian pilots were well trained in acrobatic maneuver and air to air fighting. These benefits did not outweigh two serious deficiencies. Plane maintenance was a problem for the entire campaign. This was due to logistical resupply of spare parts from mainland Italy to the front line locations of the airfields. Cooperation with the Regular Army was lacking in training and actual execution of joint operations. This is key for synchronization between the ground maneuver forces and the aircraft supporting them. These two deficiencies would cause lower readiness rate of aircraft and difficulties executing the ground commander's intent.

The theater commander of the Italian forces in Libya was Marshal Graziani. He was placed in command of all the forces in Libya after the untimely death of Air Marshal Balbo. Italian antiaircraft gunners shot down Air Marshal Balbo by mistake when landing his aircraft at Tobruk on 28 June 1940. Benito Mussolini placed Marshal Graziani in charge due to his political and military leadership. Marshal Graziani was a

Fascist General but still a soldier. He believed in the cause of the Fascist party and Italy. He was the most reliably Fascist of Italy's high military figures. He was hailed as victor over the Senussi of Libya and the Ethiopians, and held the highest rank in the Italian Army.

These were the forces and the leadership the Italian Army in Libya had at its disposal in North Africa on 10 June 1940. The Italian Army possessed a great number of personnel, resources, and equipment but lacked two things for an army of this size: mobility and quality training across the depth of all formations. The Italian military had adopted a new and revolutionary doctrine of combined arms warfare in 1939. This doctrine was called War of Rapid Decision. The forces in Libya had all the necessary elements to be successful utilizing this new doctrine but could not motorize all their available forces. Marshal Graziani had successfully used and applied motorized doctrine in the Italo-Ethiopian war and now was the commander of the Italian Armies in Libya, the 5th and 10th Armies. He faced only a small British force in Egypt.

The British Armies in the Middle East consisted of only 86,000 soldiers in June of 1940. This command stretched through eight countries and two continents. These forces were spread out between Egypt, Sudan, Aden, British Somalia, Palestine, Cyprus, and Malta. "The British forces in Egypt had at their disposal some 50,000 soldiers, and 205 airplanes" (Gooch 1990, 86). The best-equipped and trained British formation was the British 7th Armored Division in Egypt. "The British 7th Armored Division comprised over 300 armored cars, light tanks, and cruiser medium tanks, as well as numerous Bren carries" (Gooch 1990, 86).

Once war was declared the most pressing danger, which faced the British was the Italian 10th Army on Egypt's western frontier. Facing this threat was only the 7th Armored Division, the newly arrived 4th Indian Division, and one infantry brigade forward at Mersa Matruh. The 7th Armored Division and 4th Indian Division were both in the process of receiving new equipment, and both needed additional training. The 7th Armored Division had been in Egypt since 1935 and was the best-trained formation in the theater but lacked modern tanks. Once it received new tanks it would require time to train on these new systems. The British 7th Armored division would need time to receive new and improved tanks. The only force capable of dealing with the initial Italian threat were the British forces forward at Mersa Matruh.

The British force at Mersa Matruh was a motorized force. Its equipment was old and out of date. The armored cars were World War I vintage Rolls-Royces. Its tanks consisted of old Light MK IV tanks. These tanks were armed with 14-millimeter machine guns in their turrets and were thinly armored. "All the light tanks that were available had been in service for so long that the potential mileage capacity of their tracks were nearly exhausted and the only new tracks available did not fit properly" (Verney 1990, 17).

The British Army in Egypt and across the Middle East command were outnumbered by gross numbers of men, equipment, and material when compared to the Italian Army statistics. The theater of operations for the British Army did not have the resources it required. This was because the main British effort was the defense of Great Britain during this phase of World War II. Great Britain had suffered the loss of an army's worth of material in France in 1940. She was only able to save most of her

soldiers due to the "Miracle at Dunkirk." Great Britain was attempting to rebuild her home defense forces and priority for material was directed toward a threat of an invasion of Great Britain by German forces in France. The British forces in Egypt were well trained and because the smaller forces were more mobile than their Italian counterparts, this was their initial advantage at the opening stages of the campaign.

With the elimination of France, due to her surrender in June of 1940, Italy found herself with her forces out of position in Libya. The benefit of the surrender was that Italy had an overabundance of forces for an invasion of Egypt, her only remaining enemy lay to the east. Benito Mussolini directed that an invasion of Egypt should occur. The grand strategic prize of the Suez Canal and control of the Eastern Mediterranean was open to Italian arms. Graziani could chose from two courses of actions with the forces at his disposal. His first course of action was an advance in depth. He had an abundance of artillery, light L.3 tanks, medium M.11 tanks and had enough vehicles to motorize and supply one or two of his infantry divisions. He could have taken this motorized force and supported it with artillery and used it as an offensive force. His second course of action was to advance in mass. He could take his nonmotorize infantry force and advance in mass tied to the existing road networks with a small motorized force supporting his main maneuver force. He had to act and the invasion of Egypt would commence on the thirteenth of September 1940.

CHAPTER 4

THE CAMPAIGN

Field Marshal Graziani after being ordered to advance into Egypt stated Green and Massignani "For whatever evil may occur, I before God and my soldiers, am not responsible" (Green and Massignani 1994).

The British anticipated an Italian invasion of Egypt soon after the declaration of war between the Italian Empire and the British Commonwealth. The British assumption for planning their defense of Egypt was centered around an Italian thrust into Egypt along the coast which would have as its first objective the town and port of Mersa Matruh. Mersa Matruh was one hundred and sixty-five miles from the Libyan-Egyptian frontier. The village contained the British forward logistical base for the British forces operating along the Egyptian-Libyan frontier. This base was also located at the end of the transportation network from the Nile Delta, and contained a railhead and the end of the hard surface road.

The territory between Mersa Matruh and the border was open desert bordered by an escarpment ten miles inland from the sea. Between the coast and the escarpment was one coastal trail formed by the natural geography of the territory. To the south was the desert, which had a number of trails. The desert west, east, and south of Mersa Martuh was ideal for mechanized maneuver and attack. Only at one small point between the frontier and Mersa Martuh there was a natural obstacle to mechanized warfare. This was where the escarpment meets the coast at a small town called Sollum. Here was a narrow passageway from the desert plains that ran down the escarpment into Sollum. It could be

bypassed by traveling south of the escarpment but was a strategic location due to the bottleneck that it formed along the coastal road. Even so this location could be outflanked to the south by mechanized forces moving wide through Sidi Omar. Mersa Martuh also could be attacked on a number of axes of advance and was the logical choice to be the first objective of an Italian invasion.

In this undeveloped and waterless land, the radius of action of a force operating away from the coastal cities and the network of surfaced roads depended largely upon how much mechanized transport was placed at its disposal. This mechanized transport allowed for the logistics support an Army needed to survive in a desert environment. These critical logistical supplies consisted of food, fuel, repair parts and, of fundamental importance, water. An army that was not motorized or mechanized depended solely on the network of roads to support itself logistically in the Desert. Only one major hard surfaced road ran the length of Libya (know as the Via Balbia), and stopped at the border with Egypt. In Egypt one surfaced road ran from the Nile Delta to Mersa Martuh and stopped. Between Mersa Martuh and the Libyan border lay one desert trail forming a natural obstacle between the two armies. An army whose troops marched on their feet could only maneuver as fast as their feet would allow them. This same army would be tied to the road network to survive logistically on the battlefield. Soldiers and their armies who maneuvered on their feet were at a tactical disadvantage once they moved any distance from their lines of communication. These troops would become exhausted within a matter of hours by the heat and conditions of the environment.

The Italian Army's plan for the opening stages of the war in North Africa were to concentrate their main strength against a possible French invasion directed at Tripoli and to hold the border area between Tobruk and Bardia from any limited British offensive action. At some point in the future, and when they built sufficient strength, the Italian armies would go over to the offensive. Strategically they faced two enemies on each side of Libya, which placed them in a defensive posture. At the beginning of the war they were in no condition to advance into Egypt from the outset, and so, by default allowed the British the initiative.

The Italian 10th Army's war in North Africa opened with the British launching several small motorized raids across the border into Libya from Egypt. These raids were performed with older Rolls Royce armored cars, which equipped all the squadrons of the 11th Hussars. On the night of 11 June 1940 all three squadrons from the 11th Hussars crossed the frontier wire and attacked Italian outposts, Italian patrols, and set up ambushes along the entire frontier with Egypt. Not all of these attacks were successful but they did show that the Italians were not initially prepared for the first mechanized stages of the war in the western desert. Some of the Italian officers and men captured did not even know that war had been declared; others protested the British attacks from neutral Egyptian territory. These outposts were designed to defend strategic locations and support the patrols along the frontier with Egypt. The British would continue these raids across the frontier and soon would include A.9 medium tanks from the 7th Armored Division.

These initial raids represented the British taking the war to the Italians on their own terms. In adopting a mechanized warfare they were best able to capitalize on the use of their available forces and disrupt the Italian forces along the frontier. The armored cars of the 11th Hussars, advance guard of the British 7th Armored division, harassed the isolated Italian garrisons along the entire border. These raids were designed to disrupt the Italian line of communications and not allow the Italians to know where the British might strike next. Air Marshal Balbo had intended to forestall British raids by seizing at the outset of war the Egyptian border settlement of Sollum, where the Limestone plateau of the interior descended precipitously to the sea and formed an easily defended position (Knox 1982, 129). The Italian high command led by Marshal Badoglio, vetoed any offensive action from the outset and thus transferred the initiative to the British forces in the Western Desert. Initially the Italian military forces lost the initiative in the opening stages of the campaign because of this prevalent defensive attitude and the lack of use of their own mechanized doctrine with the forces at their disposal.

The Italian Armies in Libya did have mechanized forces consisting of 324 L.3 light tanks, 7 armored cars, 8 armed trucks, and 8,039 trucks but had no medium tanks at their disposal when war was declared in June of 1940 (Montana 1990, 463). The armored cars were old Fiat and Lancia World War I models, not the new and reliable AB40/41. Their new doctrine called for the use of medium and heavy tanks not the light tanks, which equipped the independent tank battalions and separate companies that were located in the two Italian armies in Libya. All the available Italian medium tanks were equipping the *Ariete* Armored Division, which was then in Italy. The three existing Italian armored

divisions were located two in Northern Italy and one in Albania. The Italian military considered this to be their main area of operation in which their doctrine was designed to fight the war. There was also one separate medium tank battalion consisting of 24 M.11 tanks, which were sent to Italian East Africa in support of that colony just prior to the outbreak of war. The Italian high command suddenly found itself involved in a war in North Africa, not Northern Italy. This is confirmed by the fact that the Italian Military, beginning with Marshal Pietro Badoglio, Chief of the General Staff, were bound to the war of infantry measured in numbers of soldiers, or the advance in mass as denominated on the Northern front in Ethiopia. This was based on over-inflated reports from the military intelligence community that estimated wrongly, hundred of thousands of soldiers available to the British in Egypt and to the French in Tunisia. This lack of medium tanks would prove crucial in the opening stages of the war in the western desert against the British.

The Italian military forces responded to these mechanized raids by forming their own mechanized combined arms teams or *raggruppamento*. So in an attempt to utilize their doctrine they formed combined arms teams with the resources which were available in Libya or in this case near the frontier. There were sufficient trucks to form motorized infantry battalions, their artillery was already motorized and there were light tank battalions in the area of operations. These combined arms team consisted of battalion and company sized elements task organized into motorized infantry, motorized artillery and light tank *raggruppamento*. To fight a mechanized force one must create a mechanized force, which they did with the assets on hand.

The first tank action to occur between the Italian armor and British armor was on the 16th of June 1940. This was only six days after the Italian declaration of war and was conducted between an Italian *raggruppamento* and elements of the British 7th Armored division. The Italians had suffered the loss of two strategic frontier outposts on the fourteenth of June 1940. The outposts were Fort Capuzzo and Fort Maddalena, which were centered on the main roads, and trails, which intersect the border area, know as the wire. The Italian Army responded to these two losses and formed a *raggruppamento.* This mechanized column was from the Italian XXI Corps mobile element, deployed along the Egyptian border in the Bardia area, and was led by Colonel D'Avanzo, a former cavalry officer, who died during the action. Later, a Gold Medal for military valor was awarded to him posthumously for this action. This mechanized column was to move forward and defeat the enemy penetrations of the frontier wire in the vicinity of Fort Capuzzo. The entire strength of this *raggruppamento* was one Libyan motorized battalion, elements of one L.3 light tank battalion and one motorized artillery section. The stage was set for the first tank on tank engagement of the western desert campaign.

The *raggruppamento's* armored element came form the IX light tank battalion, which was mobilized during November 1939 and sent to Derna Libya. It was composed of three L.3 companies for a total strength of 46 L.3 light tanks. The 3rd company, supported by another platoon from the Battalion headquarters, was task organized as part of the *raggruppamento.* This would give the *raggruppamento* a strength of 16 L.3 light tanks. The motorized Libyan infantry element for the *raggruppamento* came from the 1st Libyan Infantry Division. The artillery section for the *raggruppamento* came from the

Libyan 17th battery, IV Group and was armed with 4 77/28 artillery pieces. This *raggruppamento* formed itself with the available equipment and personnel in the Bardia area.

When the *raggruppamento* advanced toward Fort Capuzzo, the British forces thought they spotted two separate columns and decided to withdraw back across the border area. Before the orders could be sent the scouting armored cars that spotted the smaller column attacked it with only two armored cars. This touched off the Battle of Nezuet Ghirba.

The Battle of Nezuet Ghirba would be the first tank on tank engagement of the war. The raggruppamento was sent from Gabr Saleh toward Sidi Omar-Ridotta Capuzzo to clear the area of any raiding British elements. Unfortunately, this action turned out badly. The Italian motorized column was attacked by only two British armored cars initially. This occurred on a large open plain, void of any cover, along the route of march of the smaller Italian column. The Italian commander, Colonel D'Avanzo, instead of utilizing his forces as a combined arms team, instead formed a defensive square. Colonel D'Avanzo placed his four artillery pieces, one each, in each corner of the square. The infantry then formed the four sides of the square. The twelve Italian L.3 light tanks patrolled outside the square. This was clearly a defensive response by the Italian commander and did not conform to any existing Italian doctrine of the period. This was the more traditional Napoleonic defense for infantry against a cavalry attack.

The British reinforced the initial two armored cars with more armored cars and mixed force of light and medium tanks. Only two A.9 medium tanks were involved in

the battle. The Italian tanks charged forward unsupported by the infantry or its supporting artillery. They were defeated by the British armor. The light tanks operating independently of the artillery and infantry were no match for the mixed armored forces they faced. Fighting bravely and with courage they charged forward but were all disabled or destroyed.

The British armored vehicles then circled the Italian square and targeted the soft skinned Italian trucks and exposed infantry. It was only after the second trip around the square that the Italian artillery revealed themselves and opened fire on the British armored vehicles. The Italian artillery had only high explosive ammunition and no armored piercing ammunition at their disposal. They were still capable of inflicting damage on the British armored vehicles. There were no antitank guns with the column either. This was a clear violation of the Italian doctrine for combined arms teams operating in conjunction with the infantry and armor. The battle dissolved into four separate fights at each corner of the square with Italian guns and British armor engaging each other. The exposed Italian gunners soon fell and the infantry broke. There was no lack of courage or skill from the Italian gunners as they engaged the enemy armor, just the lack of armor piercing ammunition. The Italians were severely defeated with the loss of this portion of the mechanized column.

General Luigi Sibille commander of 1st Libyan Division in an after action report written for the XXI Corps HQs, wrote the following:

> On 15th June, at around 16.00 hours, at Gabr Saleh a superior officer from 10th Army HQ arrived. He had an order concerning a small column, which was

to begin operations at 20.00 hours the same day. The order contained the route, the composition and the objectives of the column. As the column was supposed to clear the area along its route and to capture some prisoners, it was necessary to give it adequate infantry support.

Colonel D'Avanzo was the only commanding officer available to lead the column. He made adequate provision for water, ammo, food, etc. At 22.00 hours, the column left Gabr Saleh. At Bir Gibni, some men from the local garrison acted as guides for the column. At 05.00 hours the column rested at Sidi Omar. At 06.30 hours the advance resumed. The column was organized thus:

On the right was a tank company. Prior to this, until reaching Sidi Omar the L.3s were transported by trucks. [This was standard Italian practice and doctrine for all their tanks. It saved on maintenance and lubricants of the armored vehicles for traveling long distances. Once enemy contact was thought to be probable they would dismount their armored vehicles.] These trucks had to follow the track, keeping close to the "wire;"

On the left of the tanks, a platoon of four L.3s, with a motorized infantry company, acted as an advance guard; at the rear of the advance guard was the remainder of the column.

[It was these dispositions, that led the British to believe that there were two distinct armored columns. From this point on there followed an incredible succession of Italian mistakes.]

The advance guard (formed by the Infantry Company and the tank platoon) signaled the presence of some British armored cars, but Colonel D'Avanzo at first thought they were the tanks of the L.3 Company on the right.

Soon it was clear they were really enemy armored cars. Two infantry platoons (under the command of Lt. Perinea and Lt. Vitally) of the advance guard left their trucks. The armored cars went after the trucks, now empty and moving away. The drivers, thinking their role was finished, retired westward, to evade the armored cars.

The remainder of the advance guard and part of the main column, now confused, started to follow the empty trucks. Colonel D'Avanzo, worried from what he was seeing, ordered Captain Andolfato, commander of the Libyan infantry Battalion, to stop their movement.

Captain Andolfato reached the trucks carrying the with the artillery section first. This was due to their load that they were carrying and were slower than the others trucks in the column. Immediately, the guns were unloaded and began firing at the armored cars. The L.3s tried to intercept the Rolls-Royces Armored Cars, which being faster, ignored them and surrounded the main column.

In a few minutes it was chaos: the main part of the column (the artillery battery, the infantrymen and some light tanks) was immobile and surrounded by the armored cars, another part was retiring, subdivided into three groups, followed by other armored cars.

Before Captain Andolfato could reach the three groups, more than 20 minutes had passed and some trucks were already at Sidi Azeiz, about 15 Kms from the area of first contact with the enemy." [It is interesting to note that the Rolls-Royces, considered very fast, weren't able to catch the Lancia 3RO trucks, capable of a max road speed of 45 Km/h.]

The three groups were reunited and reorganized by Andolfato. They included some trucks still transporting food, water, ammo and about 70 men.

At this point, Andolfato tried to reach Colonel D'Avanzo and the main body near Ghirba, but the actions of the armored cars obliged him to give this up and to go North, toward Amseat. Before starting the movement, he informed 1st Libyan division HQ of the situation of the column.

Near the airfield of Amseat he found further enemy armored cars and changed direction, following the Trigh Capuzzo. At Gambut he reached the coastal road and, after a few Kms towards Bardia, again found enemy units. They were from "C" Squadron 11th Hussars and had just destroyed 27 empty Italian trucks and captured General Lastrucci, 10th Army's commander of the Engineers.

Changing direction again, Andolfato decided to return at to Gabr Saleh, via El Adem. Along the way he was ordered to go to 10th Army HQ at Tobruk. At Tobruk Captain Andolfato reported to the HQ and, the following day, at last returned to Bir Saleh.

Returning to the immobilized part of the column, it fought with honor: the artillerymen had fallen beside their pieces, all the tanks were destroyed in action and many infantrymen died fighting. (Pignato 1988, 32-34)

General Sibille closed his report with following considerations reflecting on Italian doctrine:

"With his aggressive posture, D'Avanzo's column tested the enemy's mettle. Considering the superiority of the enemy and the inadequacy of the L.3 for deep penetrations, the defeat was inevitable, regardless of the officer in charge." (Pignato 1988, 34)

This engagement was examined in great detail by many superior officers, determined to find a responsible party for the poor showing of the *raggruppamento* but they failed to see the violation of existing Italian doctrine. The fate of the D'Avanzo column was inevitable because of the use of L.3 light tanks in the role assigned to the

medium tanks, and the impossibility of coordinating the action of light tanks with a column composed of motorized infantry.

The Italian tactical lessons extracted from General Luigi Sibille's report of the action were:

> - our light tanks aren't suited to be employed in a way different from doctrine;
> - our light tanks aren't suited to move for more than 5 Kms in desert terrain: they tend to develop mechanical problems and to break down;
> - our light tanks lack radio links with the lorried part of the columns with which they are called upon to operate;
> - the machine guns of our light tanks aren't able to penetrate the armor of the armored cars, which, on the contrary, are able to penetrate our armor [it is interesting to note that D'Avanzo didn't order the L.3light tanks to be equipped with AP ammo];
> - our artillery should be operated from on board, not transported on, the trucks so as to be faster in deploying and changing position;
> - the truck sections should be commanded by trained officers, so as to avoid problems when emptied by the transported infantry." (Pignato 1988, 34)

General Sibille's considerations, written to ease the responsibilities for the failure of the engagement do not stand up to closer examination. First, Colonel D'Avanzo did not employ the L.3 light tank according to doctrine. Second the statement that the L.3 could not move for more than five kilometers in desert terrain before breaking down was false. This had been proven first during the Ethiopian war with the L.3 tanks being employed on the Somalia front in 1936. It had been proven again during the Libyan training exercises that were conducted in May 1938.

The third point is that the Italian artillery pieces were carried on the trucks instead of being towed behind them. The primary reason the artillery was loaded on the trucks was due to the fact that they were older World War I Austrian pieces. These Austrian weapons' wheel construction did not permit them to be towed by trucks, thus they were

being carried in-portee. Italian practice in the Libyan divisions, and other motorized divisions was to mount their artillery on fast trucks (the *Dovunque*), capable of 45-50 Km/h on road, faster than the ones used by the Regular Italian infantry divisions.

The failure to properly task organize the combined arms teams for success by insuring that the L.3 light tanks had armor piecing ammunition and sufficient antitank guns is clearly a responsibility of the commander. The Libyan divisions were equipped with an excellent 20-millimeters AA/AT piece mounted on the Dovunque truck. It is not clear why D'Avanzo did not add two to four of these pieces to his column, knowing that an encounter with British armored cars was very likely. Surely, they could have exacted heavy toll from the attacking armored cars.

General Sibille's report does bring up excellent points in his report in reference to communications and leader training and to standard battle drills. The L.3 tanks had the means to communicate by radio but were unable to communicate with the motorized infantry forces. This failure of a standard communications link for all elements of the *raggruppamento* resulted in inadequate command control for the entire force. Communications is necessary to be able to operate as one combined arms team. Standard battle drills for the trucks carrying the motorized infantry caused the trucks to leave the battle area once the infantry was dismounted. This one event in itself caused the entire force to become disorganized and separated. The commander was forced to go to ground in a defensive posture to reconsolidate his position.

In "Le Operazioni in Africa Settentrionale" vol. I, "Sidi el Barrani," published in 1984 by the Italian Army historical office and written by General M. Montanari, is found the official Italian operational level lesson learned form the engagement:

> Command and Control of the column exerted by higher headquarters was poor. As the only mobile element of XXI Corps, the raggruppamento was transferred from the direct command and control of the XXI Corps HQ to 10th Army HQ. The XXI Corps was only informed of this transfer of authority after the raggruppamento was on their route of march. A few hours later, when General Dalamazzo at 10th Army was informed that the column was under heavy attack and virtually surrounded by British armored units, the Raggruppamento was returned to the command of XXI Corps, which now became responsible for its rescue.
>
> Unfortunately immediate action was impossible, for the only real help available was from the Regia Aeronautica, but this was under the direct control of Comando Superiore HQ." [This last point, concerning the RA is debatable for between 8:00 and 11:00 it should have been possible to arrange for air support from Tobruk's many airfields.]
>
> The decision to form "square" in the open, knowing the ability, mobility, co-ordination and aggressiveness of the British armored units was a great mistake by the Italian commander, especially considering how these aspects of how the British operated were regularly emphasised by the Italian commands during this period. (Montanari 1990, 65-66)

Although the first engagement was fought by relatively large forces on both sides the Italians were severely defeated. However, Colonel D'Avanzo's failure was not without some positive consequences for the Italian army in Libya. Marshal Balbo ordered the XXII Corps to the Egyptian border and asked Mussolini for Italian medium tanks, or German tanks and armored cars. The British raids continued, but without the same degree of freedom and success as before. These continued operations by the British did not prevent the Italian 10th Army from concentrating their forces between Tobruk and Bardia and further westward along the border (Playfair 1954, 119).

The Italian's first battle utilizing mechanized doctrine was a failure at the tactical and operational levels of war. This *raggruppamento* which had been formed with L.3 light tanks, motorized infantry and motorized artillery was defeated by a British a armored patrol, formed by light Mk. VIBs, medium A9s tanks and Rolls-Royce M24s armored cars. The Italian *raggruppamento* was defeated by a combination of superior British equipment and tactics in this new form of warfare and the lack of utilizing their own mechanized doctrine efficiently to counter them.

Former Lt. Ponce de Leon, then commander of a tank platoon in LXI Light Tank Bn, writes:

> The Vickers tanks (Mk. VIBs) were more or less in the same category with the Cv.35s, but when the first A9 medium tanks arrived things started to become difficult for us.
>
> The first unit to experience problems was the IX Light Tank Bn. It had fought well during the fighting for Ridotta Capuzzo, which was taken and lost many times. During a reconnaissance mission South of the Trigh Capuzzo, at Gabr Gaerfi, IX light tank Battalion, under Colonel D'Avanzo, was surrounded by superior motorized forces (armored cars, A9s, 88mm guns actually 2 pdr-).
>
> The Bn formed a circle, with the Cv.35s facing outwards. The enemy started to circle around firing against the Italians. The Bn fought hard until the end, refusing to surrender, until the last Cv.35 was destroyed and the Colonel D'Avanzo was killed. " Colonel D'Avanzo improvised, under enemy fire, a defense of infantry and artillery, counterattacking with the last light tanks under his command.
>
> I commanded a little recon party in the area and I took some pictures of L.3 destroyed, still positioned in a circle and with some crew bodies still in the tanks." (Pignato 1988, 35)

The main failures of these initial combined arms columns or *raggruppamento* were in training, equipment, and their doctrinal use. The lack of training as a cohesive force was critical. These formations were ad hoc formations with no standard battle drills. They were organized based on the current conditions and lacked the necessary

training in combined arms warfare as called upon in Italian doctrine. The new doctrine called for medium tanks working in cooperation with motorized infantry and artillery that had trained together to perform their specific mission. No prior training or cooperation existed with these units. Complete command and control relationships were not developed and poor communications nets supported them. Antitank guns were in short supply in North Africa at the beginning of the war. The main antitank gun was the 47/32 piece, which was on par with the British two pounder. However, at the start of the war, the Italian military had a very low stockpile of armor piercing (AP) rounds for both the 47/32 and the 65/17 pieces. The new doctrine called for antitank guns to cooperate with the infantry and armor to help defeat enemy armor threats. The lack of a medium tank to fight the British on equal terms and the reliance on the L.3 light tanks to perform a role they were not designed to do led to Italian failures at applying their doctrine to the newly formed *raggruppamento.* This would change with the arrival of the first medium tank battalions in North Africa.

The first 72 M.11 medium tanks arrived in North Africa on the 6th of July 1940 and were all that were available to send. These M.11 medium tanks came from the *Ariete* Armored Division and were sent over as two separate battalions. These M.11 tank battalions were the I and II Medium Tank battalions. They represented the first true Italian armor that was trained and could replicate their doctrine. After the initial small unit actions and encounters with the different mobile and mechanized columns it was recognized that medium tanks were desperately needed in North Africa to bolster the present Italian forces. Air Marshal Balbo had first requested these reinforcements at the

outset of the war, but after his untimely death, Marshal Graziani continued to request for medium tank reinforcements. These assets allowed the Italian 10th Army to have a medium tank, which could fight on par with the present British armored forces in Egypt and actually utilize the doctrine designed for their use. These assets would form the raggruppamento Maletti.

Maletti's Raggruppamento was formed on 8 July 1940 in the city of Derna in Libya (S.I.A. 1955, 122). This was just two days after the arrival of the two M.11 medium tank battalions. This was the primary motorized formation available to the Italian 10th Army in Libya. It had motorized infantry battalions and an armor element when initially formed. The motorized infantry battalions consisted of seven Libyan battalions. The armor element consisted of one medium tank company, M.11 tanks, and one light tank, L.3, company. The supporting services consisted of motorized artillery and logistics. The armored element would later be raised to a medium armored battalion, solely comprising M.11 tanks. This in the sense was the first true combined arms formation among the Italian forces in North Africa.

The Italian 10th army formed the *Comando carri della Libia* or Libyan Tank Command on the 29th of August 1940, under the command of Colonel Valentini. This command consisted of three separate *raggruppamenti.* The first was that of Colonel Aresca with the I medium Tank battalion (M.11), 31st, 61st and 62nd light tank battalions. The second commanded by Colonel Antonio Trivioli, consisted of the II medium tank battalion (M.11), less one company, 9th, 20th, and 61st light tank battalions. The third was the mixed Colonel Maletti tank battalion with the 60th light

tank battalion and the remaining M.11 company from the II medium tank battalion (Ceva amd Curami, 1989. 306-307). These elements consisted of most of the available armor formations in Libya.

The first engagement in which the Italians employed their M.11 tanks against British armor occurred on the 5 August 1940. A small Raggruppamento, composed of one platoon of motorcycle Bersaglieri, artillery, a company of L.3 tanks and a company of M11/39 tanks engaged a British column formed by armored cars, tanks and artillery. The Italians won the engagement capturing two British tanks and destroying two other British tanks. The tanks captured were of the cruiser A.9 type which the Italians placed into their own service, helping to supplement their medium tank forces. The Italians had three M11/39s damaged by artillery fire during the engagement. These M11 medium tanks were later recovered and repaired at the workshops in Bardia.

There is only one English history account of this action. None of the British or Commonwealth official histories mention this engagement, which did occur and was considered an Italian tactical victory. Kenneth Macsey takes the following account from "Beda Fomm."

> The Italians were getting stronger and stronger and toward the end of July, and felt able to start the ball rolling themselves, sending up two infantry divisions supported by a few tanks - Medium M11/39s.
>
> This force presented the British Tanks for the first time with something they could not easily overcome, particularly since the Italian artillery was handled with both aggression and skill. Keeping the British at long range they posed a tactical problem which was clearly stated in the history of the 7th Hussars, who had two tank squadrons engaged on the 29th of June: "if the tanks halt so as to engage the guns accurately, they in turn become targets for the guns. If they do not halt, they are still quite good targets and at the same time nothing but a fluke shot from the moving tank would hit an enemy gun.

> So the 7th Hussars were persuaded to pull back while the tanks of the 6th Royal tank regiment, 7th Armored Division, sent forward to support them, were ordered to refrain from rushing the three Italian batteries which were putting up a truly formidable display, Never less, as dusk began to fall, it was decided to attempt a night attack.
>
> . . . and rush at speed against the enemy batteries using Vickers machine guns continuously during such an advance," to quote orders from the 7th Hussars. At once the there came a dazzling blaze of fire from the Italian guns, tracer flying all over the place and, out of the gloom, three Italian M11s advancing, one of which rammed a British Tank. Again the British backed off after one of their cruisers had deflected a 37mm shot at point blank range, and still the Italian gunners stuck it out, through now being fired at by British 25 pounder artillery from long rang. (Macksey 1971, 19)

The Italian mechanized doctrine proved to be successful when used with the right equipment in a combined arms role. The M.11 medium tank proved capable of the task to be accomplished, even though it had some shortcomings. In this battle the tanks cooperated with the artillery, infantry and Italian medium tanks. The M.11 tank could stand up to the British armor then fielded in the Western Desert. Still after its first engagement Colonel Aresca, commander of the armor regiment, assigned to the Babini armored brigade, published a number of lessons learned.

In "La Meccanizzazione dell'esercito" fino al 1943 volume II, is found the lessons learned written by Colonel Aresca in reference to this engagement. The report drew attention on the shortcomings of the new medium M.11 tank. This report centered on them being sent to North Africa in such haste. A list of these shortcomings that needed improvement related to the armored vehicle itself and the logistical support for the medium tanks. These shortcomings were: (1) the lack of a sufficient telescope, (2) the lack of radios in each tank, (3) inadequate maintenance workshops for repair,

(4) inadequate trained mechanical support personnel,and (5) the lack of sufficient recovery tractors (Ceva and Curami 1989, 211-215).

At the design level of the new medium tank we seen again the need for radio communications between tanks for synchronized maneuver. At this point in the war and in Italian doctrine all maneuver was to be accomplished with signal flags. As with the L.3, the M.11 did not have radios for each armored vehicle, only the Commander tanks had radios. The telescopic sights for the commander were not of sufficient power to aid in the long distance target acquisition for the main tank gun. The other shortcomings were mainly due to the fact they sent the medium tank battalions without the proper logistical support primarily in maintenance to support the battalions.

The tactical lessons learned were: (1) the need of air reconnaissance and ground cooperation, (2) the need for an English-speaking officer in order to interrogate POWs to help decision of the Commander, and (3) the need for anti tank guns to accompany the mechanized forces (Ceva and Curami 1989, 211-215).

At the tactical level we see again the need again for the cooperation between air and ground elements. As called for in Italian doctrine close cooperation was to exist between the mechanized elements and the air elements, in this case to aid in reconnaissance. The glaring lack of an antitank guns is reported again. As noted in Spain, and advocated as part of their doctrine it was necessary for the infantry and armor to have antitank guns to help deal with the enemy threat of armor vehicles. Also was the first inclusion of military intelligence to assist the tactical ground commander on the

ground. The Italians had employed their new M.11 medium tanks in combat, utilized their doctrine and were now at a point to make refinements for their use.

The Italian 10th Army was primarily built around non motorized infantry divisions. It had received additional armored medium tanks, which formed combined arms teams in *raggruppamento* and in an armored brigade. The 10th Army finally had a medium tank to match or at least fight the British armored and mechanized columns utilizing their current Italian doctrine. Marshal Graziani, for his part could call on a large force of nonmotorized infantry, which was little use in this theatre. He did have artillery in overwhelming numbers and during the summer and early fall, at a time when the British Cruiser tanks were inferior in numbers (though superior in quality) to the Italian M.11 medium tank he had the advantage (Gooch 1990, 86-87). The Italian artillery was well served by its skilled crews, but it was outranged by their British counterparts. With these forces Marshal Graziani had the forces necessary to follow Italian mechanized doctrine, a doctrine which he had used on the Southern Front of the Ethiopian campaign with great success and boldness. Graziani needed to tailor his available forces and develop a plan for the invasion of Egypt to secure the strategic objective of the Nile delta and the Suez Canal.

As Graziani received supplies, equipment and his much needed medium tanks the pressure arrived from Rome for an Italian army to advance into Egypt. This invasion was scheduled to commence at three different times, and only on the fourth planned date did it begin. The first invasion was to coincide with the German invasion of England scheduled on the 15th of July 1940. When this invasion did not develop it was then planned for 22

August 1940. Due to the summer heat in August, which would have affected the primarily nonmotorized Italian formations, it was postponed for the second time. The third time was scheduled for the 9th of September 1940. Due to delays in positioning and marshalling the forces the invasion would actually begin on the 13th of October 1940. Four separate plans were developed for this grand invasion.

Marshal Graziani was extremely hesitant in his actions from the moment of taking command to the actual invasion of Egypt. Immediately after taking command he requested additional troops, supplies, tanks, equipment, and aircraft. Some of these additional requests were justified in the area of medium tanks, antitank guns, and antiaircraft guns. He also requested on many different occasions additional trucks, which numbered in the hundreds. These were items he needed to be able to fulfill the Italian mechanized doctrine. The high command in Rome sent all the available supplies and equipment that they could after realizing the situation in Libya. Still, as supplies and equipment were brought forward he would ask for more. He and his intelligence community overestimated the British capabilities in Egypt, always thinking that they possessed far superior numbers then the British actually did have at their disposal. The combination of the initial Italian engagements and the defensive attitude that prevailed left him almost paralyzed when it came to going on the offensive. He had not fought a European enemy since World War I. There was always a reason why he should not move forward. The invasion did not take place until Mussolini threatened him with removal.

The first operational plan developed by Marshal Granziani and his staff was for the planned invasion of 15 July 1940. The first invasion plan was to coincide with the

German invasion of England. Planning was conducted and called for the stripping of all the trucks from the Italian 5th Army and using the just arriving Italian M.11 medium tanks. It had very limited objectives and called for crossing the wire and occupying Sollum only. This was the initial plan Air Marshal Balbo wanted to conduct immediately after the declaration of war but was refused by Rome. Once the enemy counterattacked and the Italian armies were replenished they would then continue the advance. This plan was limited in nature with no clearly defined endstate for the operation, and only could be considered a limited tactical operation. This invasion did not materialize due to the fact the Germans did not invade Great Britain even though it made good tactical sense based on the current conditions and strength of the opposing armies in July 1940.

Another course of action that was explored by Marshal Graziani staff was forming a mechanized force to invade Egypt only, followed by garrison troops to maintain the lines of communication. Based on the amount of transport available in Libya his staff estimated they could have fully motorized two divisions and a brigade of Libyan troops (Knox 1982, 156). Combine this with the available armor and motorized artillery forces, and he would have had a potential mechanized force to invade Egypt in August of 1940. Marshal Graziani turned down this course of action. If he had adopted this course of action it would have meant that the rest of the Italian Army would be without the necessary transportation for logistical resupply. The only realistic motorized formation that could have been formed was with the *Comando carri della Libia*, possibly three or four artillery Regiments and one motorized infantry division. Even modest attempts to create a 10th Army mobile force built around a medium tank battalion met with his

disapproval (Knox 1982, 156). This went against the new Italian doctrine of mechanized war, but did agree with the Italian's Army's most cherished dogma: that strength lay in numbers.

The second operational level plan developed by Marshal Granziani and his staff was for the planned invasion of 22 August 1940. This plan called for a limited advance and its objective would be the city of Sollum. This plan had the Italian limit of advance to east of Sollum, with a point north of Shawni el Aujerin (Schreiber, Stegemann, and Vogel 1995, 271). This would have three primary forces advanicing on three separate axis of advance. Only after securing his initial objectives would he advance to Sidi Barrani, if warranted by success. This plan was limited in nature and only could be considered a limited operation, which followed the advance-in-mass theory as seen on the northern front of the Ethiopian War. The Italian binary nonmotorized infantry divisions were assigned the only road network available to them. Due to the summer heat in August, which would have affected the primarily nonmotorized Italian formations, it was postponed for the second time.

The third operational level plan developed by Marshal Graziani and his staff was for the planned invasion of 9 September 1940. Graziani had defined his new objective of Sidi Barrani and only informed his staff six days prior to the date Benito Mussolini ordered him to finally invade Egypt. This did not allow much time for his staff to prepare the new plan and get it to the field commanders. Two separate forces attacking on two separate axis of advance would make this attack. The Metropolitan Italian nonmotorized divisions would advance along the coast and attack through Halfaya Pass and occupy

Sollum and continue forward to Sidi Barrani. The southern column consisting of the Libyan Divisions and Maletti's *raggruppamento* were to advance on the Dayr al-Hamra – Bir ar Rabiyah – Bir Enba track to flank the escarpment and the enemy. This plan was an example of Italian mechanized doctrine. The combination of the advance of forces advancing along the coast pinning the enemy and the Italian mechanized forces operating to turn the enemy's flank followed Italian mechanized doctrine.

According to this plan, Maletti's *raggruppamento* was intended to make a long flanking movement through the desert, this being ideally suited for the role of mechanized forces according to Italian doctrine. However Marshal Granziani's staff failed to provide the proper maps and navigation equipment needed to work deep in the desert. Moving to its assembly point for the invasion, the Maletti *raggruppamento* got lost and the XXIII Corps Headquarters had to send aircraft out to their location and help lead his units into their positions. Additionally the Libyan divisions, which were to accompany him, took an unconscionable time to rendezvous near Fort Capuzzo (Pitt 1989, 50). These developments and the fact that Marshal Granziani believed that the material prerequisites underlying his operational plan were still lacking sufficient trucks, and transport aircraft, as well as command of the space changed the plan again. (Schreiber, Stegemann, and Vogel 1995, 271).

The fourth plan developed by Graziani and his staff was for the planned invasion of 13 September 1940. Graziani still defined as his objective Sidi Barrani and points south. The Italian 10th Army consisting of five divisions and the armored elements would advance in mass down the coast road. They would occupy Sollum and advance to

Sidi Barrani through Buq Buq. Due to what he thought were his Army's failings to adequately implement the third plan he decided on an advance in mass. He intended to advance to Sidi Barrani, consolidate his holdings, resupply his army, destroy any British counter attacks and then resume the advance to Mersa Matruh. The Italian binary nonmotorized infantry divisions were forced to utilize the only road network available to them. If he was going to use these forces in an advance he would have to utilize the coastal road, because they would be ineffective anywhere else. This was clearly the model shown on the northern front in Ethiopia. It did not comply with existing Italian mechanized doctrine, which he had ample forces to execute. He believed the only way to defeat the British would be by sheer numbers and weight, because he overestimated the strength of the enemy, which was something he had not feared in Ethiopia.

On the morning of the thirteenth of September, 1940 the great Italian invasion of Egypt began. The Italian 10th Army had three Corps, XXI, XXII, and XXIII consisting of most of the Italian strength in Libya. The XXI Corps was in Tobruk. The XXII Corps was in reserve. The XXI Corps was the 10th Army Reserve. It contained the nonmotorized 61st *Sirte* infantry division, the nonmotorized *28 Ottobre* CCNN division and one light tank battalion. The nonmotorized 61st *Catanzaro* infantry division, and the nonmotorized *3 Gennaio* CCNN division were attached to the XXII Corps in Tobruk.

The XXIII Corps spearheaded the Italian 10th Army's attack into Egypt. General Annibale Bergonzoli, commander of XXIII Corps, advanced to Sidi Barrani along the coastal road with his nonmotorized and motorized formations. The XXIII corps was given enough trucks to partially motorize three infantry divisions for the advance but

could only fully motorize one infantry division. General Bergonzoli wanted to advanced with the 1st *raggruppamento* carri as the advance guard, two motorized infantry divisions on line, one motorized infantry division in reserve, two Libyan nonmotorized infantry divisions on foot, and the Maletti *raggruppamento* in the rear. The motorized formations were, the partially motorized 62nd *Cirene* infantry division, the partially motorized 63rd *Marmarica* infantry division, the fully motorized *23 Marzo* CCNN division, the motorized the Maletti *raggruppamento* and the 1st *raggruppamento carri.* The partially motorized infantry divisions would move in shuttle fashion. The nonmotorized infantry had to march the sixty miles to the objective.

During the advance into Egypt, the 1st *Raggruppamento carri* was kept in reserve, except for the LXII L.3 light tank battalion assigned to the 63rd *Marmarica* Infantry division and LXIII L.3 light tank battalion assigned to 62nd *Cirene* infantry division. The 2nd *raggruppamento carri* was located at Bardia, except for the IX L.3 light tank battalion assigned to 2nd Libyan infantry division. The II M.11 medium tank battalion was with Raggruppamento Maletti but the Maletti *raggruppamento* only had three Libyan infantry battalions for the attack, but these were fully motorized to carry its infantry.

The invasion started with an artillery barrage followed by an advance behind a rolling barrage. The Italians took and occupied their first objective, which was Sollum. Then over the next four days the Italian Army advanced along the coast with two divisions leading, behind a screen of motorcyclist, tanks, and motorized infantry and artillery. On 14 September, what remained of the *1st raggruppamento carri*, in reserve

under 10th Army HQ was following the advancing 1st and 2nd Libyan divisions toward Bir Thidan el-Khadim. At Alam el Dab right before Sidi Barrani, Italian mechanized forces attempted to outflank the British forces. At this point about 50 Italian tanks supported by motorized infantry and artillery attempted to outflank and surround the British rear guard. This flanking maneuver forced the British forces to retreat.

On the evening of the sixteenth, the *1st raggruppamento carri* was east-southeast of Sidi Barrani, along with the 23 Marzo division and all the artillery of XXIII Corps. R*aggruppamento* Maletti was still west of the objective. *Raggruppamento* Maletti was not able to fully participate in the offensive because of various logistical and organizational problems it was dealing with during the advance. The 1st r*aggruppamento carri* was used only in a prudent infantry support role. The Italian army was only able to advance twelve miles each day based on the nonmotorized elements it contained. Once reaching Sidi Barrani, its primary objective, it halted and began to develop a series of well-fortified camps. There were no bold mechanized strokes or flanking movements. These mechanized elements, the best in the Italian 10th Army and the XXIII Corps, were the advance guard of an army in mass advancing up the coastal road at the pace of the slowest foot soldier.

During the advance the Italian forces lost 120 dead and 410 wounded with a number of tanks and trucks lost to mechanical failure. The Regia Aeronautica lost a total six planes, two of them due to accidents. The only three truly motorized elements of 10th Army r*aggruppamento* Maletti, 1st r*aggruppamento carri* and the 23 *Marzo* CCNN infantry division failed to act following the mechanized doctrine. This was for a lack of

preparation, training and organization on the Italian army. Other fragment problems included the problems with assembling and directing the r*aggruppamento* Maletti, the timid use of the remaining tank battalions of 1st r*aggruppamento carri,* the totally improvised motorization of the 23 Marzo, which caused a lack of synchronization between truck drivers and the infantry. The division was not trained to act like a motorized infantry division. In the end the advance reached its objectives with modest costs, but failed to wear down the British forces which would then be employed in their subsequent offensive.

The British had expected the Italians to make a flanking movement well south of the coast and had concentrated most of their small forces south of the escarpment. Only one Coldstream motorized infantry battalion and some artillery were on the coast to oppose the main weight of the Italian invasion. This force fought a delaying action against the advancing Italians. The main armor strength of 7th Armored division was located at Mersa Matruh. The British strength in Cruiser tanks was only eighty five, of which fifteen were out of action undergoing repair (Schreiber, Stegemann, and Vogel 1995, 276). Mersa Matruh is where the British thought the Italians were going to advance and they planned to defend there, and utilize their mechanized forces against the Italian flanks and long lines of communication, which the Italians would have to maintain. But the Italians stopped at Sidi Barrani and established a series of fortified positions.

The Italian Army of mass established itself in five fortified camps. Here they built and maintained their logistics lines of communication and awaited the British

counterattack. The British waited for the Italians to resume their offensive. This was not going to happen until the Italians had time recover from the advance, reorganize their units, build a hard surface road and a water pipeline forward to Sidi Barrani. In essence the Italians were building up their logistical supply base and waiting for the enemy counterattack. This pattern followed closely what had occurred on the northern front in Ethiopia. The British waited for the Italians to advance to their next objective and prepared their defenses. Since it did not happen immediately they would again make raids on the Italian forces and their lines of communications.

The Italian medium armor strength was relatively intact after the advance to Sidi Barrani. On 21 September there were still 68 M.11 tanks out of the original 72 shipped to North Africa. From these 68 M.11 tanks 31 were unserviceable due to maintenance and 37 serviceable between the two tank battalions. 1st medium tank battalion had 9 serviceable and 23 unserviceable. The 2nd medium tank battalion had 28 serviceable and 8 unserviceable (Ceva and Curami 1989, 307). Their medium tank strength would increase because the next generation Italian tank would soon be arriving in North Africa. This tank was the M.13 tank, which was much better in quality and performance than the M.11 and was equal to the British Cruiser tanks. The medium M.13 tank had a hard-hitting 47-millimeter gun in a rotating turret with two 8-millimeter machine guns in the hull and had the same chassis as the M.11 medium tank. The II medium tank battalion with 37 M.13 tanks arrived in Libya during the first days of October, followed by the V Medium Tank battalion equipped with 46 M.13 tanks on 12 December 1940. These armored forces gave the Italians an increasing advantage until mid November of 1940

with 417 medium and light tanks in Libya and Egypt. At this point massive British reinforcements in cruiser tanks and the Matilda Heavy tank and additional infantry divisions from the commonwealth would erode the advantages the Italians may have possessed and passed the initiative back to the British.

After the conquest of Sollum, the *Comando carri della Libia* transformed into the *Brigata Corazzata* and added some artillery elements. This grouping of units was united west of Bardia, near Mersa Lucch. These elements formed the *Babini* Armored Brigade. The *Babini* Armored Brigade was formed on the 18th of November 1940 utilizing the I medium tank battalion (M.11) and the II medium Tank battalion (M.13) initially (Ceva and Curami 1989, 308). These medium tank battalions were the medium tank battalion assigned to this newly formed organization and the center of its combat power. The elements assigned to this organization were I medium tank battalion, M.11 tanks, II medium tank battalion M.13 tanks, one motorized bersaglieri regiment, 1 motorcycle battalion, 2 antitank companies, 47/32 antitanks guns mounted on trucks, and 1 artillery regiment, 1 battalion of 75/27 guns, 1 battalion of 100/17 guns, 1 battery of 75 CK anti-aircraft guns, and 2 batteries of 20-millimeter anti-aircraft guns (Ceva and Curami 1989, 217). The armor brigade was to become the armored component of the 1st Libyan Armored Division.

The Italian Army began to makes plans for the next phase of the operation. This would be an advance to Mersa Matruh, planned for December 16th 1940. At the start of British counteroffensive only the IX L.3 light tank battalion, still with 2nd Libyan infantry division, II M.11 medium tank battalion, still with r*aggruppamento* Maletti and

LXIII and XX L.3 light tank battalions, with XXI Corps HQ, were east of the "wire" in Egypt. Before the Italian Army could execute this plan the British counterattacked their fortified camps in what was to be a five-day raid called "Operation Compass". These camps were well defended but they did not have overlapping fields of fire. In these areas of dead space they relied on ground and air patrols to monitor British actives. The lack of Italian air to ground cooperation allowed the British to attack one camp from the rear, and then in detail defeat the other camps and force the Italians to withdraw back to Libya. The Italian Medium tanks consisting of M.11 and M.13s would be destroyed while warming up their engines before breakfast during the initial British attack.

The Italians faced a new mechanized enemy, one in which they were not equipped to defeat in 1940. This mechanized enemy was the Matilda heavy tank. The Italian soldiers fought bravely but technology and British use of doctrine defeated them. This was the counterattack that the army of mass was to destroy, but by consolidating their position and not resuming the advance the Italians had allowed the British time to build their strength to defeat them.

From the start of the Italian advance in Egypt to the battle of Beda Fomm, the inadequate operational flexibility of the Italians formations was made worse by micro-management at the tactical level from the higher echelons of command. The invasion of Egypt was under command of the 10th Army, but Marshal Graziani, overall commander in Libya, micro-managed the operations down to regimental level, often without even informing the10th Army and Corps commanders. This often caused confusion and, during the British counter-offensive, helped to freeze many Italians units, awaiting orders

or receiving hopelessly outdated ones. This was another violation of the doctrine, where the mobile formation commanders were to be given large tactical freedom of maneuver.

This was the beginning of the end of the Italian 10th Army in Egypt and in Libya. The five day British raid known as Operation Compass extended into a campaign that destroyed the Italian 10th Army and pushed the Italians almost back to Tripoli by February of 1941. The Italian 10th Army would at last be destroyed and surrender at the battle of Beda Fomm, a mere ghost of its former self. Thus the Italian invasion of Egypt failed to meet the strategic military goals and national political objectives of the government. The Italian 10th Army equipped with their newly developed doctrine, and commanded by Marshal Graziani, was severely defeated by a smaller British Commonwealth Army of only 35,000 soldiers.

The Italian 10th Army was primarily built around non motorized infantry divisions, which was of little use in this theatre, but it had received additional armored medium tanks, which formed combined arms teams into *raggruppamento.* The Italian medium tank could match or at least fight the British armored and mechanized columns utilizing their current Italian doctrine. Graziani also had artillery in overwhelming numbers and during the summer and early fall, at a time when the British Cruiser tanks were inferior in numbers (though superior in quality) to the Italian M.11 medium tank he had the advantage (Gooch 1990, 86-87). With these forces Marshal Graziani had the forces necessary to follow Italian mechanized doctrine. All Marshal Graziani needed to do was tailor his available forces and develop a plan for the invasion of Egypt to secure the strategic objective of the Nile delta and the Suez Canal. Instead of utilizing his forces

according to Italian mechanized doctrine he chose the doctrine of mass, allowing the British to react and seize the initiative in the western desert.

CHAPTER 5

CONCLUSION

The Italian Army developed a new and revolutionary doctrine of combined arms warfare in 1938 based on the lessons learned from their experiences of the 1930s. The success from the use of Italian combined arm teams in Spain and in Ethiopia proved the concept of motorized forces and the natural follow-on of mechanization for the Italian Army. This doctrine was called the War of Rapid Decision. With this doctrine the Italian Army had developed a new and dynamic operational art of war. The Italian military in Libya had all the necessary elements to be successful utilizing this new doctrine. In addition it had a commander that already successfully used and demonstrated an applied motorized doctrine in the Italo-Ethiopian war where it proved victorious to him. Marshal Graziani didn't utilize this new doctrine. The operational plan Marshal Graziani and his staff did execute was an advance in mass for the invasion of Egypt.

The operational plan Marshall Graziani and his staff should have developed was for a two-phase invasion, utilizing Italian mechanized doctrine, based on the forces available to him. This plan would have called for the stripping of all the trucks from the Italian 5th Army and using the just-arriving Italian M.11 medium tanks as the main mechanized striking force. The Italian army should have formed a mechanized force to invade Egypt, only followed by garrison troops to maintain the lines of communication. Based on the amount of transport available in Libya, his staff estimated they could have fully motorized two divisions and a brigade of Libyan troops (Knox 1982, 156). Combined with the available armor and motorized artillery forces, he would have had a

potential mechanized force to invade Egypt with in August of 1940. The only realistic motorized formation that could have been formed is with the Comando Carri Armati della Libia, possibly three or four artillery Regiments, and one motorized infantry division.

The first phase of the operation would have been the Italian Army occupying the city of Sollum. This first phase would see them crossing the wire and occupying Sollum with the available infantry and artillery formations. This force would stay and garrison the city, protect the line of communication, and act as a reserve. This phase of the operation would see the Metropolitan Italian nonmotorized divisions advance along the coast and attack through Halfaya Pass and occupy Sollum. This would have allowed the Italian army to control this strategic terrain and use it has the starting point for the second phase of the operation.

The second phase of the plan would see two primary forces advancing on two separate axes of advance to Mersa Martuh. Two separate forces attacking on two separate axes of advance would make this attack. The slow moving foot infantry could advance along the coastal road. This would allow the Italian binary nonmotorized infantry divisions to utilize the only road network available to them and have some use in the campaign. The Metropolitan Italian nonmotorized divisions would advance along the coast and continue forward to an intermediate objective of Sidi Barrani and then on to the final objective Mersa Martuh. The southern column consisting of the Libyan Divisions and the armored Comando Carri Armati della Libia would advance on the Dayr al-Hamra–Bir ar Rabiyah–Bir Enba track to flank the escarpment, and the enemy, with the ultimate objective of Mersa Martuh. In this manner, the Italian army could have met the

British at Mersa Martuh utilizing the non motorized Italian formations in a suitable role, and the motorized formations to flank their defense and cut the British line of communications defeating, them at Mersa Martuh.

This plan would have been an example of Italian mechanized doctrine utilizing the available forces. The combination of the advance of forces moving along the coast, pinning the enemy, and the Italian mechanized forces operating to turn the enemy's flank followed Italian mechanized doctrine. This plan would have the Italian mechanized elements making long flanking movements through the desert. Such employment would have been ideally suited for the mechanized forces, according to Italian doctrine. Only under this concept and applying their mechanized doctrine would Italian forces have had a reasonable chance for success against the British. Since Marshal Graziani failed to apply Italian doctrine he was defeated in detail by a significantly smaller British force in the western desert.

Had the Italian Army and Marshal Graziani struck early in the desert campaign and in strength utilizing their new doctrine it is doubtful that the British could have stopped them short of the Nile river. Instead of pursing that goal the Marshal Graziani asked for more resources to accomplish that mission instead of acting. When Marshal Graziani was forced into action, the Italian Army in North Africa didn't adopt a plan of an attack in depth but reverted to a plan utilizing an attack in mass. This failing caused the Italian army to be defeated during its invasion of Egypt. One can only speculate on the reasons for Graziani's failure to employ the rapid decision doctrine. Surely one key factor was the Italian Army's deficiency in the areas of the army leadership, training level of the different organizations, leadership of the organizations, unit cohesion, logistics,

and armored vehicles. A combination of these factors made the Italian Army less effective then it could have been in the campaign.

The War of Rapid Decision required deep penetrations into the enemy rear and flanks to be successful and the elements to perform these missions. One could not perform this task by utilizing mass; it would have to be done by mobile columns with the audacity, skill, and mechanization to perform the mission. The Italian Army adhered to the one principle they understood and that was rigidity based on utilization of mass. The Italian army continued to use the concentration of the greatest mass for every task that faced them in the opening stages of World War II. In the attack they would deploy this mass in line and rely solely on weight of numbers to clear the way. They believed that the enemy would be defeated by wave after wave of Italian assault troops and did not employ wide-ranging mechanized columns in support of the Army. This belief was learned from their World War I experience and the new doctrine of the War of Rapid Decision was not fully understood or trained by the units and leaders of the Italian Army.

The Italian Army staff failed to provide army wide influence on the implementation of the new doctrine at the tactical, operational and strategic levels. This new doctrine of the War of Rapid Decision called for small numbers of highly trained, well-equipped mechanized forces. The Italian army had only recently begun to mechanize its force structure and it still contained nonmotorized infantry formations in 90% of its Corps and divisional structure. There was only one Armored Corps in the Italian Army and limited cooperation between the nonmotorized infantry corps and armored corps.

The Italian Army did emphasize the integration of combined arms tactics. Initially this only rested in the artillery and infantry formations but soon incorporated the armor formations. The ability of units to understand and utilize the new armored vehicles was limited to the amount of training for their employment and use in combat. Many ad-hoc formations were raised but were not cohesive units due to the lack of training and understanding of the roles and relationships each had to the other formations with their organization. Inadequate training and technology limited the effectiveness of these combined arms teams and only after a year of warfare would this gradually extend across the Italian Army.

The Italian Army failed to realize the extent to which a nonmotorized infantry force was handicapped in the desert environment of Libya and Egypt. Most of the armor and motorized force of the Italian army was in Italy and Albania. There were limited armor and motorized forces in North Africa at the beginning of the war. The focus for their new doctrine was based on fighting a war in the hilly and mountainous terrain of Northern Italy and not the desert environment of their colony in Libya. The use of the L.3 tank in the role intended for the medium tank proved disastrous in Libya. The Italian Army tactical system based on the forces present at the start of the war proved that it was unable to cope with the British mobile counterblows in the manner that the strategic concept of the summer of 1940 presented the Italian military.

Training within the Italian army tended to be inconsistent with any effective tactical system. Training was suppose to be done to an army wide standard and according to doctrine. The issue with training was the enforcement of the training standard across the army. In reality, each separate command had the responsibility of

training with little or no supervision from division, corps, and army level. Not all elements trained to the standards required of the War of Rapid Decision.

The Italian Army's ability to maintain its motorized and mechanized equipment in North Africa was poor. The Army maintenance system failed to provide the necessary maintenance and field workshops for the armored units and transportation units sent to North Africa after the declaration of war. In November 1940 almost 2,000 vehicles in Libya were out of service due to maintenance problems and issues. Poor maintenance of vehicles handicapped the Italian Army's ability to utilize the doctrine of the War of Rapid Decision.

Italian military intelligence failed the Italian leadership in Africa. The Italian intelligence community had an extensive, reliable and accurate network throughout Egypt and the Middle East. This network was able to provide accurate and reliable information on British troop convoys. The Italian intelligence analysts who received this information were so alarmed by the overabundance of information they were receiving it frighten them. The intelligence analysts tended to overestimate the actual British strength in numbers of material and equipment for the early part of the war in 1940. This overestimation gave the Italian military and Marshal Graziani a false impression of British capabilities in Egypt. Based on these false capabilities Marshal Graziani believed he needed a much larger force to deal with the British threat.

None of the problems facing the Italian Army in Libya were insurmountable. The British position in Egypt was precarious at best. All the Italian Army had to do was act and they would have forced the British back to the Nile River or defeated them soundly. The key factor for the Italian Army was in its senior leader. The supreme commander,

Marshal Graziani, had utilized and showed a direct understanding of the new form of mechanized warfare in an earlier conflict but failed to employ it in his invasion of Egypt. As leader of the Italian forces he was the one individual that could have chosen to utilize the proper force and doctrine for the Italian army to be successful in its goals. Marshal Graziani had last fought a European enemy in World War One. His rise to general officer and subsequent claims to victory were against Libyans and Ethiopians. He proved to be timid in fighting against an European enemy that had the capability in defeating him versus an enemy that only had the ability in delaying him. This may have inhibited his ability to make bold and aggressive plans. Marshal Graziani's ability to command such a large organization may be the key to his defeat. He commanded from the rear and was not a front line commander. Being in the rear caused delays in receiving information from the forward-deployed units and those in contact. Marshal Graziani would make decisions based on old and inaccurate information. He would also send orders directly to units, bypassing layers of command. This caused great confusion on the battlefield. It violated the principle of war know as Unity of Command. Marshal Graziani failed to implement a plan that would assure success and the plan he did implement, he did not pursue with a sense of urgency or aggressiveness. He had the experience, doctrine and available forces to defeat an enemy whose position was tenuous at best. Ultimately all responsibility for success or failure rests with the commander.

This thesis should broaden the reader's views and understanding of Italy's early participation in the opening stages of the Western Desert Campaign. Italy would suffer her first major defeat of World War II during this campaign, even though the Italian Army had adapted a new doctrine of mobile and combined arms warfare in 1938. The

Italian 10th Army, commanded by Marshall Graziani, was severely defeated because they failed to adopt this new doctrine and instead advanced in mass into Egypt. The defeat of the Italian 10th Army during the opening stages of the North African campaign was a severe blow to Fascist Italy and the Italian Empire. This defeat failed to meet the strategic military goals, national political objectives of the Italian government and showed the failure of Italian combined arms. Italy's defeat in Egypt ensured reliance on Germany for the continuation of the Axis war effort in North Africa. Italy no longer played the dominant role in her African colony, which she governed from 1912 to 1943, or the Mediterranean Basin. Successful application of the "War of Rapid Decision" doctrine in 1940 might not have altered the ultimate outcome of World War II, but it would have dramatically changed the shape of the struggle for the Mediterranean.

APPENDIX A

ITALIAN ARMY ORDER OF BATTLE, LIBYA 10 JUNE 1940

Supreme Commander Italian Forces in North Africa: Air Marshall Balbo Italo

Western Frontier (Tunisia)

5th Army

X Corps
- 25th Infantry Division "Bologna"
- 60th Infantry Division "Sabratha"

XX Corps
- 17th Infantry Division " Pavia"
- 61st Infantry Division " Sirte"
- 27th Infantry Division "Brescia"

XXIII Corps
- 1st CCNN Infantry Division "23 Marzo"
- 2nd CCNN Infantry Division "28 Ottobre"
- 2nd Libyan Infantry Division (reserve to 5th Army)

Eastern Frontier, (Egypt)

10th Army

XXI Corps
- 63rd Infantry Division "Cirene"
- 62nd Infantry Division "Marmarica "

XXII Corps
- 64th Infantry Division "Catanzaro"
- 4th CCNN Infantry Division "3 Gennaio"
- 1st Libyan Infantry Division (reserve to 10th Army)

Italian Army divisions were identified by a number, such as the 62nd, but also by a name, such as "Marmarica." In either case one may find one of the other listed when making reference to a particular Italian unit.

APPENDIX B

ITALIAN 10TH ARMY ORDER OF BATTLE, LIBYA, 13 SEPTEMBER 1940

Supreme Commander Italian Forces in North Africa: Marshal Rodolfo Graziani

Eastern Frontier (Egypt)

10th Army

Commander: Mario Berti

XXI Corps (10th Army Reserve)

Located in Tobruk

61st Infantry Division " Sirte"
2nd CCNN Infantry Division "28 Ottobre"
LX Light Tank Battalion (L.3)

XXII Corps (follow on Corps for Libyan-Egyptian Border defense)

64th Infantry Division "Catanzaro"
4th CCNN Infantry Division "3 Gennaio"

XXIII Corps (Primary invasion Force)

Commander: General Annibale Bergonzoli

Located massed on Libyan-Egyptian border

1st CCNN Infantry Division "23 Marzo" (fully motorized for the invasion)
62nd Infantry Division "Marmarica " (partially motorized for the invasion)

LXIII light tank battalion (L.3) (reinforcing the 62nd Infantry Division)

63rd Infantry Division "Cirene" (partially motorized for the invasion)

LXII light tank battalion (L.3) (reinforcing the 63rd Infantry Division)

1st Libyan Infantry Division (non-motorized)
2nd Libyan Infantry Division (non-motorized)

IX light tank battalion (L.3) (reinforcing the 2nd Libyan Infantry Division)

Comando Carri Armati della Libia (-)

1st Raggruppamento Carri (-) (reserve to XXIII Corps, under control of 10th Army)

I Medium Tank Battalion (M.11)
XXI Light Tank Battalion (L.3)

2nd Raggruppamento Carri (-) was located at Bardia

XX Light Tank Battalion (L.3)
LXI Light Tank Battalion (L.3)

Maletti Raggruppamento (part of XXIII Corps)

II medium tank battalion (M.11)
3 Motorized Libyan Infantry Battalions

Note: The XXIII Corps had 1000 motorized trucks to support the advance into Egypt. The partially motorized infantry divisions would move in shuttle like fashion in a series of lifts to move their forces. The armored forces were used in an infantry support role and not in a decisive independent role. All light tank battalions were assigned to support a particular infantry division within XXIII Corps for the invasion. The Medium Tank battalions followed the advancing infantry formations. The non-motorized infantry had to march 60 miles to the objective, which tied the mechanized elements to the same pace of march. Only at one point on the 16th of September 1940 did the Italian advance move away from the coastal road. At Alam el Dab right before Sidi Barrani, did Italian mechanized forces attempt to outflank the British forces. At this point about 50 Italian

tanks supported by motorized infantry and artillery attempt to outflank and surround the British rear guard. This flanking maneuver forced the British forces to retreat.

The Italian medium armor strength was relatively intact after the advance to Sidi Barrani. On 21 September there were still 68 M.11 tanks out of the original 72 shipped to North Africa. From these 68 M.11 tanks 31 were unserviceable due to maintenance and 37 serviceable between the two tank battalions. 1st medium tank battalion had 9 serviceable and 23 unserviceable. 2nd medium tank battalion had 28 serviceable and 8 unserviceable.

APPENDIX C

ITALIAN ARMY ORDER OF BATTLE FOR THE 10TH ARMY, LIBYAN-EGYPT, 9 DECEMBER 1940

Commander 10th Italian Army - General Italo Gariboldi.

Libyan Corps – General Sebastiano Gallina.

Location Sector I.

1st Libyan Infantry Division - General Giovanni Cerio.

Located at Wadi Maktila in fortified positions.

1st Libyan Raggrupamento Infantry.

VIII (8th) Libyan Infantry Battalion - Wadi Maktila.

IX (9th) Libyan Infantry Battalion - Wadi Maktila.

X (10th) Libyan Infantry Battalion - Wadi Maktila.

2nd Libyan Raggrupamento Infantry (-).

XI (11th) Libyan Infantry Battalion - at Sanyet Abu Gubeire.

XII (12th) Libyan Infantry Battalion - Wadi Maktila.

XIII (13th) Libyan Infantry Battalion - Wadi Maktila.

1st Raggrupamento Libyan artillery.

I Gruppo (12 77/28) - Wadi Maktila.

II Gruppo (12 77/28) - Wadi Maktila.

2 20mm AA batteries (16 -20mm guns) - Wadi Maktila.

II Battalion Engineers - Wadi Maktila.

Anti-tank company (8-47/32 guns) - Wadi Maktila.

Reinforcing and attached to the division:

G.A.F. Anti-tank company (8-47/32 guns) - Wadi Maktila.

2 G.A.F 65/17 Batteries (8 65/17 guns) - Wadi Maktila

I Gruppo 202nd Artillery Regiment '28 Ottobre CC.NN' (12 75/27 guns) - Wadi Maktila

1 Battery of 105/28 guns (4 105/28 guns) I battery /II gruppo/XXI/22 Corps Artillery regiment- Wadi Maktila

2nd Libyan Division - General Armando Pescatori

Located in fortified camps at Ras el Dai & Alam el Tummar East and West. A total of three locations

3rd Libyan Raggrupamento Infantry

II (2nd) Libyan Infantry Battalion - Ras el Dai.

VI (6th) Libyan Infantry Battalion - Tummar West

VII (7th) Libyan Infantry Battalion - Tummar West

4th Libyan Raggrupamento Infantry.

XIV (14th) Libyan Infantry Battalion - Tummar West

XV (15th) Libyan Infantry Battalion - Tummar East

XVI (16th) Libyan Infantry Battalion - Ras el Dai

2nd Raggrupamento Libyan artillery

I Gruppo (12 77/28) - Tummar West

II Gruppo (12 77/28) - Tummar East

2 20mm AA batteries (16 -20mm guns)((2 guns per section eight total sections for 16 guns))

3 20mm AA sections - Tummar West

2 20mm AA sections - Tummar East

3 20mm AA sections - Ras el Dia.

I Battalion Engineers - spread among the three camps

Anti-tank company (8-47/32 guns)

Anti-tank company (reinforcing) (8-47/32 guns)

5 platoons 47/32 guns (20 guns)- Tummar West

1 platoon 47/32 guns (4 guns) - Tummar East

3 platoons 47/32 guns (12 guns) - Ras el Dai

IX Light Armored Battalion (reinforcing)(22 L.3) - Tummar East.

2 G.A.F 65/17 Batteries (reinforcing)(8 65/17 guns)

1 battery of 65/17 guns - Tummar West

1 battery of 65/17 guns - Ras el Dai

II gruppo/202 Artillery Regiment (reinforcing) '28 Ottobre CC.NN' (12 75/27 guns)

2 batteries of 75/27 - Tummar West

1 battery of 75/27- Tummar East

1 Battalion (-)(reinforcing), two batteries of 105/28 guns (8 105/28 guns) II, and III batteries of the II Gruppo/ XXI/22 Corps Artillery regiment

1 battery of 105/28 guns - Tummar East

1 battery of 105/28 guns - Ras el Dai

1 battery C.A. 75/CK (reinforcing)((4 75/CK guns)) – Tummar West

4th Black Shirts Division " 3 Gennaio" – General Fabio Merzari

Location: Sidi Barrani in fortified position

250th Legion - Sidi Barrani

81st Black Shirts Battalion - Sidi Barrani

150th Black Shirts Battalion - Sidi Barrani

156th Black Shirts Battalion - Sidi Barrani

270th Legion.

170th Black Shirts Battalion - Sidi Barrani

172nd Black Shirts Battalion - Sidi Barrani

174th Black Shirts Battalion - Sidi Barrani

204th Artillery Regiment - Sidi Barrani

Machine Gun Battalion - Sidi Barrani

Mixed (including Signals) Engineer Battalion - Sidi Barrani

Company of mortars (81mm)- Sidi Barrani

Anti-tank Company 47mm ATGs - Sidi Barrani

Support Battery of 65/17 guns - Sidi Barrani

Divisional Services - Sidi Barrani

XXI Corps - General Carlo Spatocco

Location: Sector II

XX Light Tank Battalion (L.3) - Buq Buq

XLIII Light Tank Battalion (L.3) - Buq Buq

X Heavy Machinegun Squadron

One company Motorcyclist

Maletti's Raggruppamento - General Pietro Maletti

Located in two fortified camps Nibeua and Alam el Iktufa

Once reaching Sidi Barrani during the initial invasion this organization stayed at this location. Over the next two months it changed organization by gaining and losing formations. When operation compass began it had the following:

Raggruppamento Headquarters

I (1st) Libyan Infantry Battalion – Nibeua

V (5th) Libyan Infantry Battalion – Nibeua

XVII (17th) Libyan Infantry Battalion - Alam el Iktufa

XIX (19th) Libyan Infantry Battalion (-)

1 Libyan Infantry company – Nibeua

1 Libyan Infantry company – Nibeua

1 Libyan Infantry company - Alam el Iktufa

One Saharan Battalion – Nibeua

2nd Medium tank Battalion (22 M.11) - North West of Nibeua

One company mortars (9 81mm) – Nibeua

One Anti-tank company (8 47/32 guns) – Nibeua

One Anti-tank company (8 47/32 guns) - Alam el Iktufa

Artillery – Nibeua

I Gruppo 65/17 (12 65/17 guns)

Two batteries of 65/17 guns – Nibeua

One battery of 65/17 guns - Alam el Iktufa

II Gruppo 75/27 (12 75/27 guns) – Nibeua

One Battery of 105/28 guns (4 105/28 guns) – Nibeua

One Battery of 20mm AA guns (8 20mm guns) – Nibeua

One Battery (-) of 20mm AA guns (6 20mm guns) – Nibeua

One section of 20mm AA guns (2 20mm guns) - Alam el Iktufa

63rd Infantry Division "Cirene" – General Alessandro De Guidi.

Located in the zone of Alam el Rabia to Bir Bofafi in a fortified position

157th Infantry Regiment.

3 Infantry Battalions

1 company of 81mm mortars

1 Battery of 65/17 guns

158th Infantry Regiment

3 Infantry Battalions

1 company of 81mm mortars

1 Battery of 65/17 guns

LXIII Machine Gun battalion

45th Artillery Regiment

I/45th Gruppo (12 75/27 guns)

II/45th Gruppo (12 75/27 guns)

III/45th Gruppo (12 100/17 guns)

I/21 Gruppo (12 105/28 guns) reinforcing

III/12 Gruppo (12 100/17 guns) reinforcing

III/21 Gruppo (12 75/27 guns) reinforcing

Two batteries of 8 65/17 guns reinforcing

202nd Anti-tank Company with 8 47/32 guns reinforcing

64th Infantry Division "Catanzaro" - General Giuseppe Amico

Located in the zone of Alam Samalus (south East of Buq Buq) in a fortified position This division moved from Gambut-Bardia area at the beginning of December

141st Infantry Regiment

3 Infantry Battalions

1 company of 81mm mortars

1 Battery of 65/17 guns

142nd Infantry Regiment

3 Infantry Battalions

1 company of 81mm mortars

1 Battery of 65/17 guns

LIV Machine Gun battalion

64th Anti-Tank company (47/32 guns)

203rd Artillery Regiment

I/203rd Gruppo (12 75/27 guns)

II/203rd Gruppo (12 75/27 guns)

III/203rd Gruppo (12 100/17 guns)

LXIV Engineer Battalion

XXIII Corps – General Annibale Bergonzoli

Sector III

1st Black Shirts Division " 23 Marzo" – General Francesco Antonelli

Location: Fortress city of Bardia

219th Legion-Bardia

114th Black Shirts Battalion – Bardia

118th Black Shirts Battalion - Sid Omar

119th Black Shirts Battalion – Bardia

233rd Legion – Bardia

129th Black Shirts Battalion – Bardia

133rd Black Shirts Battalion – Bardia

148th Black Shirts Battalion – Bardia

201st Artillery Regiment – Bardia

Note: I/201 artillery 100/17 (one battery) moves to Buq Buq in support of its defense

Machine Gun Battalion – Bardia

Mixed (including Signals) Engineer Battalion – Bardia

Company of mortars (81mm) – Bardia

Anti-tank Company 47mm ATGs – Bardia

(Note: that 6 47/32mm guns left at Sidi el Barrani, possibly the whole company.)

Support Battery of 65/17 guns – Bardia

Divisional Services – Bardia

2nd Black Shirts Division " 28 Ottobre" – General Francesco Argentino

Located at Sollum-Halfaya zone
(on the 8th and 9th of December)

231st Legion – Sollum

131st Black Shirts Battalion – Sollum

132nd Black Shirts Battalion – Sollum

135th Black Shirts Battalion-Sollum (Arrives by truck on the 9th)

238th Legion

138th Black Shirts Battalion – Sollum

140th Black Shirts Battalion(-) – Tobruk

2 companies – Tobruk

2 companies – Sollum

145th Black Shirts Battalion - Sollum (Arrives by truck on the 9th)

202nd Artillery Regiment (Regular Army)

I group (75/27 guns)- Sidi el Barrani with the first Libyan

II group (75/27 guns)- Ras el Dai and Tummar with the 2nd Libyan

III group (100/17 guns) – Sollum

202nd Machine Gun Battalion(-) - Buq Buq

This battalion was in an improvised defense at Buq Buq with the 64th Division Cantanzaro (this division really was south east of Buq Buq). 1 platoon with Armored forces at east of Buq Buq. The Italian 10th Army had the XX, and XLIII tank battalions located there or in the vicinity of Buq Buq.

202nd Mixed (including Signals) Engineer Battalion (Regular Army) (-) Sollum

One company of Artieri(construction engineers)

202nd Company of mortars (81mm)

202nd Anti-tank Company 47mm ATGs - Alam el Rabia - Bir Bofafi.- Attached to the 63rd Division, Cirene

202nd Support Battery of 65/17 guns

Divisional Services – Sollum

62nd Infantry Division "Marmarica" - General Ruggero Tracchia

Located in the zone of Sidi Omar to Gabr du Fares in fortified positions

Infantry Regiment

3 Infantry Battalions

1 company of 81mm mortars

1 Battery of 65/17 guns

116th Infantry Regiment

3 Infantry Battalions

1 company of 81mm mortars

1 Battery of 65/17 guns

LXII Machine Gun battalion

62nd Anti Tank Company (47/32 guns)

44th Artillery Regiment

I/44th Gruppo (12 75/27 guns)

II/44th Gruppo (12 75/27 guns)

III/44th Gruppo (12 100/17 guns)

LXI Engineer Battalion

2 Anti-Tank companies (47/32 guns) reinforcing

2 Batteries of 65/17 guns reinforcing

LXII Light Armored Battalion (L.3 Tanks)

XXII Corps - General Enrico Mannella

Located in Cirenaica, under command of Marshall Graziani.

1st Infantry Division "Sirte" - General Vincenzo Mura

Located in the zone of Litoranea to Gambut

69th Infantry Regiment.

3 Infantry Battalions.

1 company of 81mm mortars

1 Battery of 65/17 guns.

70th Infantry Regiment.

3 Infantry Battalions.

1 Company of 81mm mortars

1 Battery of 65/17 guns

43rd Artillery Regiment

I/43rd Gruppo (12 75/27 guns)

II/43rd Gruppo (12 75/27 guns)

III/43rd Gruppo (8 100/17 guns)

LXI Engineer Battalion

2 Parachute Infantry Battalions reinforcing

Brigata Corzzatta Speciale – Commander General Valentino Babini

Located in the zone of Marsa Lucch and Litoranea in Libya

I Medium Tank Battalion (M.11)

III Medium Tank Battalion (M.13)

XXI Light Tank Battalion (L.3)

LX Light Tank Battalion (L.3)

1 Gruppo Artillery (75/27 guns)

Garrison forces:

Tobruk, Bardia and smaller outposts

APPENDIX D

ITALIAN AIR FORCE ORDER OF BATTLE, LIBYA 10 JUNE 1940

Bombers

10th Stormo: 30 Savoia-Machetti SM.79 bombers
14th Stormo: 12 Savoia-Machetti SM.79 bombers, and 1 BR.20 bombers
15th Stormo: 35 Savoia-Machetti SM.79 bombers, 8 Savoia-Machetti SM 81 bombers, and 3 Breda BR.20 bombers
33rd Stormo: 31 Savoia-Machetti SM.79 bombers

Fighters

2nd Stormo: 36 Fiat CR.32 and 25 Fiat CR.42 fighters
10th Gruppo: 27 Fiat CR.42 fighters
50th Stormo: 11 Breda BA.65 ground attack aircraft, 3 Imam RO.41 reconnaissance planes and 23 Caproni CA.310 light bomber/reconnaissance planes

Observation

64th Gruppo: 8 RO.37bis and 5 RO.1bis reconnaissance planes
73rd Gruppo: 6 RO.37bis and 1 RO.1bis reconnaissance planes
143rd Squadron: CANT Z.501/6 naval reconnaissance planes

Colonial

I Gruppo Aviazione Presidio Coloniale: 18 CA.309, CA.310, and RO.37 light bombers/reconnaissance aircraft
II Gruppo Aviazione Presidio Coloniale: 21 CA.309, CA.310, and RO.37 light bombers/reconnaissance aircraft

Note: A total of 363 different types of aircraft existed to support Italian forces in North Africa. Only 306 were considered combat ready, and 57 were for training. 179 of the aircraft were in maintenance workshops as of 10 June 1940.

APPENDIX E

ITALIAN ARTILLERY SITUATION, LIBYA 10 JUNE 1940

Anti-Aircraft guns:
- 76/40: 12
- 76/45: 8
- 75/27: 27
- 20mm: 209

Anti-Tank guns:
- 47/32: 127

Light caliber field artillery:
- 65/17: 146
- 75/27 Model 906: 215
- 75/27 Model 911: 48
- 75/27: 236
- 77/28: 336

Medium caliber field artillery:
- 100/17: 172
- 105/28: 97

Heavy caliber field artillery:
- 120/25: 48
- 149/12: 37
- 149/35: 90

Heavy Mortars
- 210/8: 3

Note: A total of 1,811 different types of artillery existed to support Italian forces in North Africa. Only 1,427 pieces were in Italian formations. 384 were in maintenance workshops or in storage as of 10 June 1940. Italian artillery is noted as two numbers, separate by a slash, i.e. 47/32, 100/17 etc. This is the correct designation for naming their artillery pieces. The first figure is the diameter of the bore of the barrel in millimeters and the second is the caliber of the gun's length.

APPENDIX F

ITALIAN NAVAL FORCES, LIBYA, 10 JUNE 1940

Tripoli

11th Torpedo Boat Squadron:
Cigno, Castore, Climene, and Centauro

Mine Layers:
M. Gargano

Gunboat:
Alula.

Tobruk

Armored Cruiser: San Giorgio

1st Destroyer Squadron:
Turbine, Aquilone, Euro, and Nembo

61st Submarine Squadron:
Sirena, Argonauta, Fisalia, Smeraldo, and Naiade

62nd Submarine Squadron:
Diamante, Topazio, Nereide, Galatea, and Lafole

Gunboats:
Palmaiola, De Lutti, Grazioli Lante, Giovanni Berta, and Valoroso

Water Tankers:
Lini Campanella, Ticino, and Polifemo

Tobruk Naval Garrison

Naval Batteries:
10 Italian Naval Batteries

Italian Marines:
One MAS Battalion

The Royal Italian Navy in Libya had 5,364 personnel assigned to this command to include 31 naval ships and submarines. The main naval base for operations was the fortress port of Tobruk.

APPENDIX G

BRITISH ARMY ORDER OF BATTLE, EGYPT 10 JUNE 1940

Commander-in-Chief Middle East, General Sir Archibald Wavell

Western Desert Force, Commander-Lieutenant General R.N. O'Conner

7th Armored Division. Commander Major-General M. O'Moore

4th Armored Brigade – Mersa Matruh.
1st Royal Tank Regiment.
6th Royal Tank Regiment.

7th Armored Brigade (-) – Sidi Sulieman.

7th Hussars.
8th Hussars.

Support Group. (Motorized Infantry Brigade) – Sidi Barrani.

1st K.R.R.C. Battalion
2nd Motor Battalion The Rifle Brigade.
3rd Battalion Coldstream Guards.
1st Royal Northumberland Fusiliers
3rd Royal Horse Artillery.
F Battery, 4th Royal Horse Artillery,
11th Hussars (attached to Support Group from 7th Armored Brigade) – Forward at Sidi Barrani with operations on the Libyan-Egyptian Border.

Cairo Infantry Brigade – Garrison for Mersa Matruh.

Other Commonwealth Forces in Egypt.

4th Indian Division (Short One Infantry Brigade) - Nile Delta.

5th Indian Infantry Brigade.
11th Indian Infantry Brigade.
Divisional Troops.

6th Australian Infantry Division (Newly Forming)– Nile Delta.

2nd Zealand Infantry Division (Newly Forming)– Nile Delta.

Note: Once war was declared the most pressing danger, which faced the British was the Italian 10th Army on Egypt's western frontier. Facing this threat was only the 7th Armored Division, the newly arrived 4th Indian Division, and one infantry brigade forward at Mersa Matruh. The 7th Armored Division and 4th Indian Division were both in the process of receiving new equipment, and both needed additional training. The 7th Armored Division had been in Egypt since 1935 and was the best trained formation in the theater but lacked modern tanks. Once it received new tanks it would require time to train on these new systems. The British 7th Armored division would need time to receive new and improved tanks. The only force capable of dealing with the initial Italian threat were the British forces forward at Mersa Matruh.

The British force at Mersa Matruh was a motorized force. Its equipment was old and out of date. The armored cars were World War One vintage Rolls-Royces. Its tanks consisted of old Light MK IV tanks. These tanks were armed with 14mm machine guns in their turrets and were thinly armored. All the light tanks that were available had been in service for so long that they needed new tracks and engines. The 6th Australian Infantry Division had arrived in Egypt in February 1940 and the New Zealand Infantry Division soon after. Both units were considered illequipped and not trained at the time of the deceleration of war by Italy.

APPENDIX H

BRITISH ARMY ORDER OF BATTLE, ITALIAN INVASION, 13 SEPTEMBER 1940

Commander-in-Chief Middle East, General Sir Archibald Wavell

Western Desert Force, Commander-Lieutenant General R.N. O'Conner

7th Armored Division. Commander Major-General M. O'Moore

4th Armored Brigade – Mersa Matruh.

1st Royal Tank Regiment – One Squadron south of Escarpment vicinity of Sidi Sulieman Sidi Sulieman

6th Royal Tank Regiment - Mersa Matruh.

7th Armored Brigade (-) – Mersa Matruh.

7th Hussars- Mersa Matruh.

8th Hussars- Mersa Matruh.

11th Hussars – South of Escarpment vicinity of Sidi Sulieman.

Support Group. (Motorized Infantry Brigade) – Mersa Matruh.

1st K.R.R.C. Battalion (-) - South of Escarpment vicinity of Sidi Sulieman.

One company in support of 3rd Coldstream Guards at Halfaya Pass.

2nd Motor Battalion The Rifle Brigade - South of Escarpment vicinity of Sidi Sulieman.

3rd Coldstream Guards Battalion – Halfaya Pass

1st Royal Northumberland Fusiliers (-) South of Escarpment vicinity of Sidi Sulieman.

One Machine-gun company in support of 3rd Coldstream Guards at Halfaya Pass.

3rd Royal Horse Artillery (-) South of Escarpment vicinity of Sidi Sulieman.

C Battery, 3rd Horse Artillery – Halfaya Pass

F Battery, 4th Royal Horse Artillery- Halfaya Pass

French Motor Marine Company – Buq Buq.

Cairo Infantry Brigade – Garrison for Mersa Matruh.

Note: The British had expected the Italians to make a flanking movement well south of the coast and had concentrated most of their small forces south of the escarpment, in the vicinity of Sidi Sulieman. Only one reinforced motorized infantry battalion and some artillery batteries were on the coast to oppose the main weight of the Italian invasion. This force fought a delaying action against the advancing Italians. The main Armor Strength of 7th Armored division was located at Mersa Matruh. The British strength in Cruiser tanks was only 85, of which 15 were out of action undergoing repair.

Mersa Matruh is where the British thought the Italians were going to advance and they planned to defend there, and utilize their mechanized forces against the Italian flanks and long lines of communication, which the Italians would have to maintain. But the Italians stopped at Sidi Barrani and established a series of fortified forts.

APPENDIX I

BRITISH ARMY ORDER OF BATTLE, OPERATION COMPASS, 9 DECEMBER 1940

Commander-in-Chief, Middle East: General Sir Archibald Wavell

Western Desert Force: Lieutenant-General R.N. O'Conner

Corps Troops

- 7th Battalion, Royal Tank Regiment (Matildas)
- 1st Royal Horse Artillery
- 104th Royal Horse Artillery
- 51st Field Regiment R.A.
- 7th Medium Regiments R.A.
- 64th Medium Regiments R.A.

7th Armored Division

- 4th Armored Brigade
- 7th Armored Brigade
- Support Group. (Infantry Brigade)
- Divisional Troops

4th Indian Division

- 5th Indian Infantry Brigade
- 11th Indian Infantry Brigade
- Divisional Troops
- 19th Infantry Brigade (attached to 4th Indian Division until 11 December 1940)

Selby Force (brigade Group for the defense of Marsa Matruh)

Note: The Total Commonwealth Force consisted roughly of about 31,000 soldiers, 120 artillery pieces, 275 tanks, and 60 armored cars. The Italian 10th Army in Egypt consisted of 80,000 soldiers, 250 artillery pieces, and 125 tanks. The key advantage for the British forcer was the number and type of tanks, especially the Heavy Infantry support tank, Matilda.

APPENDIX J

ITALIAN ORDER OF BATTLE FOR THE D'AVANZO RAGGRUPPAMENTO FORMED ON 16 JUNE 40.

Commander Colonel Lorenzo D'Avanzo

One Motorized Libyan infantry Battalion

One L.3 tank company from IX light tank battalion (L.3)

One L.3 platoon from the Battalion headquarters of the IX light tank battalion (L.3)

One 77/28 section (4 guns) from the Libyan 17th battery/VI Group

In total: 200 soldiers, 4 77/28 guns, 16 L.3 tanks, and 30 trucks

Note: Dr. Nicola Pignato, after an extensive research in the Italian Army historical office archives, found the exact composition of the D'Avanzo column's tank component. "The IX Light Tank battalion, mobilized during November 1939, was sent by ship from Brindisi, Italy to Derna, Libya. It was composed of three tank companies. Its commander was Captain Rizzi. The 3rd company was present at the action of 16th June, supported by another platoon from the battalion HQ, giving a total of 16 L.3 tanks. After the destruction of the 3rd company, the battalion was reorganized as two companies and was later destroyed during January 1941.

APPENDIX K

ITALIAN ORDER OF BATTLE FOR MALETTI'S RAGGRUPPAMENTO AS TASK ORGANIZED ON 8 JULY 1940

Maletti's Raggruppamento

Seven Libyan Infantry Battalions: Note: These seven battalions were consolidated into two Libyan regiments: (1st and 5th)

I (1st) Libyan Infantry Battalion

III (3rd) Libyan Infantry Battalion

IV (4th) Libyan Infantry Battalion

V (5th) Libyan Infantry Battalion

XVII (17th) Libyan Infantry Battalion

XVIII (18th) Libyan Infantry Battalion

XIX (19th) Libyan Infantry Battalion

One Saharan Battalion

One 65/17 Group (12 Guns)

One 75/27 Group (8 Guns)

One M11/39 Company

One L.3 Company

Two 47/32 Anti-tank companies

One 81mm mortar company

Two 20mm AA batteries

Two Engineer Companies

160 Camels

500 vehicles

APPENDIX L

ITALIAN ORDER OF BATTLE FOR MALETTI'S RAGGRUPPAMENTO AS TASK ORGANIZED IN DECEMBER 1940

Italian Order of Battle for Maletti's Raggruppamento as task organized in December 1940. Once reaching Sidi Barrani during the initial invasion this organization stayed at this location. Over the next two months it changed organization by gaining and losing formations.

Maletti's Raggruppamento

Raggruppamento Headquarters

Infantry.

I (1st) Libyan Infantry Battalion
V (5th) Libyan Infantry Battalion
XVII (17th) Libyan Infantry Battalion
XIX (19th) Libyan Infantry Battalion
One Saharan Battalion
One company mortars (9 81mm)
One Anti-tank company (8 47/32 guns)
One Anti-tank company (8 47/32 guns)

Armor

2nd Medium tank Battalion (22 M.11)

Artillery

I Gruppo 65/17 (12 65/17 guns)
Two batteries of 65/17 guns
One battery of 65/17 guns
II Gruppo 75/27 (12 75/27 guns)
One Battery of 105/28 guns (4 105/28 guns)
One Battery of 20mm AA guns (8 20mm guns)

One Battery of 20mm AA guns (8 20mm guns)

APPENDIX M

ITALIAN ORDER OF BATTLE FOR THE COMANDO CARRI ARMATI DELLA LIBIA FORMED ON 29 AUGUST '40. COMMANDER GENERAL BABINI.

Three raggruppamenti were formed using the available medium and light tank battalions in the 10th Army. The first being those of Colonel Aresca. The second under Colonel Antonio Trivioli. The third was the mixed Maletti tank Raggruppamento.

1st Raggruppamento Carrista under Colonel Aresca:

I Medium Tank Battalion (M.11)

XXI Light Tank Battalion (L.3)

LXII Light Tank Battalion (L.3)

LXIII Light Tank Battalion (L.3)

2nd Raggruppamento Carrista under Colonel Trivioli:

II Medium Tank Battalion (M.11) (-)

IX Light Tank Battalion (L.3)

XX Light Tank Battalion (L.3)

LXI Light Tank Battalion (L.3)

Raggruppamento Carrista under Colonel Maletti (A mixed armored battalion under Maletti was formed by one company from the II Medium Tank Battalion(M.11) and the LX Light Tank Battalion (L.3))

Medium Tank Company (M.11)

LX Light Tank Battalion (L.3)

APPENDIX N

ITALIAN ORDER OF BATTLE FOR THE BRIGATA CORZZATTA SPECIALE (BABINI ARMORED BRIGADE) FORMED ON 18 NOVEMBER 40. COMMANDER GENERAL VALENTINO BABINI.

Brigata Corzzatta Speciale

I Medium Tank Battalion (M.11)

III Medium Tank Battalion (M.13)

XXI Light Tank Battalion (L.3)

LX Light Tank Battalion (L.3)

1 Motorcycle Bersagliere Battalion

1 Gruppo Artillery (75/27 guns)

1 Gruppo Artillery (100/17 guns)

Note: This reorganization incorporated the newly arrived III medium Tank Battalion, which was equipped with 37 M.13 tanks. Reinforced by these 37 M13s of the III medium tank battalion and some artillery units, Brigata Corzzatta Speciale (Babini Armored Brigade) was formed west of Bardia, near Mersa Lucch. At the start of British counteroffensive only the IX light tank battalion (L.3) (still with 2nd Libyan Infantry Division), II Medium Tank Battalion (M.11) (still with Maletti) and LXIII and XX light tank battalions (L.3) (assigned to XXI Corps HQ) were east of the "wire" in Egypt. This gave the Italian 10th Army a total strength of approximately 125 L.3 and M.11 tanks in Egypt.

APPENDIX O

TABLE OF ORGANIZATION FOR A LIGHT ITALIAN TANK BATTALION, 1940

Light Tank Battalion, 40 L.3 tanks

Battalion Headquarters Company, 1 L.3 battalion commander's tank

Three L.3 Tank Companies, 39 L.3 tanks

L.3 Company, 13 L.3 tanks

One Headquarters Platoon, 1 L.3 company commander's tank

Three tank Platoons, 4 L.3 tanks per platoon

Note: Italian light tank battalions were assigned initially four per Italian armored regiment or were assigned as independent tank battalions to Army and Corp level commands. An Italian Light Armored regiment would have 164 L.3 tanks assigned, 160 in the battalions and 4 in the regimental headquarters. The four-battalion organization changed to a three-battalion organization in1941.

APPENDIX P

TABLE OF ORGANIZATION FOR A MEDIUM ITALIAN TANK BATTALION, 1940

Medium Tank Battalion, 49 M.11 or M.13 tanks

Battalion Headquarters Company, 1 M.11 or M.13 battalion commander's tank

Three Medium Tank Companies, 48 M.11 or M.13 tanks

Medium Tank Company, 16 M.11 or M.13 tanks

One Headquarters Platoon, 1 M.11 or M.13 company commander's tank

Three tank Platoons, 5 M.11 or M.13 tanks per platoon

Note: Italian medium tank battalions were assigned initially three per Italian armored regiment or were assigned as independent tank battalions to Army and Corp level commands. The regiment had 157 tanks assigned, 147 in the three battalions and 10 in the regimental headquarters

APPENDIX Q

THE ITALIAN FIAT ANSALDO CARRO VELOCE L.3 TANK

The Italian L.3 light tank was designed to be able to operate in the mountainous terrain found in Northern Italy. This tank would fight in the Italo-Ethiopian war, the Spanish Civil War and World War II. It would be the most encounter Italian armored vehicle on all fronts in World War II. The tank would go through a number of production series and developmental changes during its history. It was a light vehicle of only three tons but was fully tracked and armored. Ideally suited and designed to operate in snow and mountainous terrain. Its design development dates back to 1929 with the acquisition of 25 British Carden Loyd Mark VI tankettes. Fiat Ansaldo's modification of the Mark VI, armed with a Fiat Model 14 water-cooled 6.5mm machinegun was deignated as the Carro Veloce, CV 29. Italy would use this tank model for the basic design and development of their own unique Italian tank design the L.3. Italy would produce 2,000 of this small L.3 tanks for its own use and export.

The L.3 was initially fielded in 1933 and was called the CV 3/33. This model had one 6.5mm machine gun as its main gun. A follow on model was developed and fielded in 1935. This model had two 8mm machineguns and had slightly different design features and a few modifications to it. This model was called the CV 3/35. All CV 3/33 would be upgraded to the armament specifications of the CV 3/35. An additional model was developed in 1938 and this design had a different suspension system. This model was called the CV 3/38 and was produced in limited numbers. In accordance with Italian doctrine all vehicle nomenclatures would be called by the type, light (L), medium (M) or Heavy (P) and by the weight until 13 June 1940, when it change to the year introduced.

The official title for this tank and all of its variations was L.3, or light tank of three tons until 1940 when it changed to L.35, or light tank introduced in 1935. In official documents and histories you will see it called CV 3/35, L.3 or L.35.

Many variations were made to the basic design for special purpose vehicles. These variations included a flame thrower version (Carro lanciafiamme) with an armored trailer or self contained vehicle mounted tank, which was most encountered, radio equipment command versions for company and battalion commanders, 20mm Solothrun anti-tank gun version (where the machine guns were replaced by the 20mm antitank gun), experimental bridge laying version and armored recovery vehicle version. The Italian army was able to adapt the basic design to many different needs of their armored forces.

The L.3 light tank was not intended to be utilized in lieu of medium or heavy tanks. In accordance with the new Italian doctrine it was to be used in the security role, reconnaissance role and have the ability to eliminate small pockets of resistance. However the outbreak of war in June of 1940 forced the Italians to utilize what tanks they had on hand to perform the many missions of their armored forces. Since the three Italian armored divisions were in Italy and Albania, no medium tanks were available to the forces in Libya in 1940. The only tank they had available to them was the L.3 attempting to be utilized in the role of the medium or the currently being designed heavy tank. The initial strength in armored forces in Libya consisted of 339 armored vehicles. The majority of these armored forces were L.3 tanks and armored cars. They had 322 L.3 tanks and 17 Armored Cars in their two Libyan armies.

L.3 Specifications:

Weight: 3.2 tons

Crew: 2 (driver and gunner)

Main Gun: CV 3/33: One Fiat 6.5mm model 14 aircraft machine gun fixed in the hull

CV 3/35: Two 8mm either Fiat model 35 or Breda Model 38 fixed in the hull

CV 3/35 L.F: One flame-thrower fixed in the hull
One 8mm Fait model 35

Elevation: -12 degrees to +15 degree.

Traverse 12 degrees to either side

Ammunition Capacity: CV 3/33 2240 rounds

CV 3/35: 8mm Fait model 35, 2170 rounds
8mm Breda model 38, 1896 rounds

CV 3/35 L.F.: Flame-thrower version carried 500 liters of liquid in an armored trailer, or 60 liters in self contained vehicle mounted tank. 8mm Fiat model 35, 1820 round.

Road Speed: CV 3/35 42 kph
CV 3/35 L.F. 40 kph

Cross Country Speed: 15 kph

Road operating radius: 150 KM

Cross Country Operating Radius: 6 hours of endurance

Horsepower: 43 at 2400 RPM

Engine Fiat CV3-005, 4 cylinder in line

Fuel: Gasoline

Fuel Capacity: 62 Liters, no reserve fuel tanks

Radio: One R.F. 1 C.A.
No radio in the CV 3/35 L.F.

Armor (hull) 15mm front, 9mm rear; 9mm sides; 6-mm floor, deck and roof

Length: CV 3/33 3.2 meters (10'6")
CV 3/35 3.15 meters (10'4")

Width: 1.4 meters (4'7")

Height: 1.28 meters (4'2")

Ground Clearance: .23 meters (8")

Trench crossing: 1.45 meters (4'9")

Vertical Obstacle: .65 meters (2'2")

Fording depth: .7 meters (2'4")

Dates of service: CV 3/33 (1933-1945) (All models updated with 2 8mm guns)
CV 3/35 (1935-1945)

Italian Combat Use: Albania, British Somalia, Corsica, Crete, Croatia, Egypt, Eritrea, Ethiopia, France, Greece, Italy, Libya, Rhodes, Russia, Sardinia, Sicily, Somalia, Spain, Sudan, Tunisia, Yugoslavia.

Exported: Afghanistan, Austria, Bolivia, Brazil, Bulgaria, China, Hungary and Iraq

Produced under export license: Hungary

Combat Use by other countries in World War II. British Commonwealth, China, Germany, Great Britain, Greece, and Yugoslavian partisans

Production:	1933-1939	2,000
	1940	0
	1941	0
	1942	52
	1943	32
	1944-1945	17

Note: Specifications and characteristics of the CV 3/33, CV 3/35 and CV 3/35 L.F., except as noted above, are identical to those of the CV 3/35.

APPENDIX R

THE ITALIAN FIAT ANSALDO CARRO ARMATO M.11 ANK

The Italian M.11 medium tank was designed to be the medium tank to utilize the new Italian doctrine of "*War of Rapid Decision*" and be the main tank equipping the new Italian armored divisions. It was designed primarily based on the lessons of the Spanish Civil War. This medium tank would fight in Libya, Egypt and Italian East Africa in World War II. The basic design would be the platform which succeeding Italian tank development would be based on for the remainder of World War II. It would be the most encounter Italian medium tank by the Commonwealth forces until 1941. In the M.11s first skirmishes with British armor it was quite successful in North Africa. It would also prove to be successful in the conquest of British Somalia in 1940. Italy would produce only 100 of these medium tanks until production shifted to a better designed medium tank in its M.13 series of tanks.

The M.11 was initially fielded in 1939 and participated in the summer maneuvers of the Italian Army. The M.11 was a medium armored vehicle of eleven tons but was fully tracked, and was armed with a tank-killing gun. The M.11 tank mounted one 37mm gun in the hull with limited traverse and two 8mm machine-guns in the turret. The tank weighed eleven tons, and had frontal armor of only 30mm. This frontal armor was not sufficient to stop the penetration of the 2 pounder British anti-tank gun, which was the main tank-killing gun for the British forces in the Western desert. There was a need for improvement, which the M.13 series of tanks would hope to fulfill any deficiencies found in the M.11. In accordance with Italian doctrine all vehicle nomenclatures would be called by the type, light (L), medium (M) or Heavy (P) and by the weight until 13 June

1940 when it change to the year introduced. The official title for this tank and all of its variations was M.11, or medium tank of eleven tons until 1940 when it changed to M.39, or medium tank introduced in 1939. In official documents and histories you will see it called M 11/39, M.11 or M.39.

The M.11 was developed to fulfill the need for a better-armored vehicle in the Italian armored formations. The tank battalion, the main striking force of the division, had to have adequate combat power. The M.11 tank would be the first medium tank developed based on this new requirement. When this tank was designed it was with on par with contemporary designs in other nations but by the time it was fielded it was inadequate. There was a long time between development, production and then fielding of this tank.

This was the new break through tank for the Italian Army as designed and equipped the Ariete armored division in Italy. Even so it was not felt to be adequate and a new medium tank with the main armament in the turret and a four-soldier crew was being developed and placed into production to full the roles intended for the M.11. The M.11 was almost inadequate even before it went into its first combat missions in the Western Desert but still could have been utilized to achieve victory early in the campaign against the British armored forces.

M.11 Specifications:

Weight: 11 tons

Crew: 3 (Commander/machine gunner, driver and gunner)

Main Gun: One 37/40 gun fixed in main hull

Elevation: -8 degrees to +12 degrees

Traverse 30 degrees

Secondary Gun: Two Breda Model 38 in the Turret

Ammunition Capacity: 37/40, 84 rounds of 37mm

8mm Breda model 38, 2808 rounds

Road Speed: 32 kph

Cross Country Speed: 15 kph

Road operating radius: 210 KM

Cross Country Operating Radius: 10 hours of endurance

Horsepower: 125

Engine: SPA 8 T, V-8

Fuel: Diesel

Fuel Capacity: 145 Liters, 35 liters in reserve fuel tanks.

Radio: None

Armor (hull) 30mm front; 15mm sides and rear; 6mm floor, deck and roof

Armor (turret) 30mm front; 15mm sides and rear; 6mm roof

Length: 4.73 meters (15'6")

Width: 2.18 meters (7'2")

Height: 2.30 meters (7'7")

Ground Clearance: .36 meters (1'2")

Trench crossing: 2.0 meters (6'7")

Vertical Obstacle: .8 meters (2'8")

Fording depth: 1 meter (3'3")

Dates of service: (1939-1943)

Italian Combat Use: British Somalia, Egypt, Eritrea, Ethiopia, Libya, and Somalia

Combat Use by other countries in World War II. British Commonwealth and Great Britain

Production: 1939-1940: 100

Employment: 24 Italian East Africa
72 Libyan
4 Italy (training)

APPENDIX S

THE ITALIAN FIAT ANSALDO CARRO ARMATO M.13 TANK

The Italian M.13 medium tank was designed to correct the deficiencies of the M.11 and to become the primary medium tank to equip the Italian armored formations in the role of a medium tank. The M.13 and its different series of tanks, M.14 and M.15, became the main battle tank equipping Italian armored formations in World War II. It was designed primarily based on the deficiencies of the M.11 tank which were moving the main gun to the turret and increasing the crew from three to four soldiers. It was placed into design, development and production quickly. This medium tank would fight in Libya, Egypt, Tunisia, France, Italy, and the Balkans in World War II. It would be the most encounter Italian medium tank by allied forces until 1943. In the M.13s first skirmishes with British armor it proved to be on par with British cruiser tanks capable of defeating them.

The M.13 was initially fielded in 1940 and participated in its real fighting against the British counter offensive in the Western Desert. The M.13 was a medium armored vehicle of 13 tons and was armed with a hard-hitting tank-killing gun. It was designed on the basic hull of the M.11 tank but had major improvements over the M.11. The M.13 tank mounted one 47mm gun and 8mm machine gun in the turret and two 8mm Breda machine guns in the hull with a limited traverse. The tank weighed thirteen tons, and had frontal armor of only 30mm. This frontal hull armor, like the M.11, was not sufficient to stop the penetration of the 2-pounder British anti-tank gun, but the armor was increased in all other areas on the tank. The M.13 did suffer from mechanical breakdowns in the desert, but so did the British tanks, which weren't designed to fight in the desert

environment either. It also suffered a low power to weight ratio, resulting in a slow speed for its size. The initial series did not have radios but this soon would be corrected with the second series of production models and all subsequent series. Still it could defeat and hold its own against British cruiser and America supplied M.3 Stuart light tanks. There was a need for improvement, which the M.13 series of tanks would correct with later models of the M.14 and M.15 series of medium tanks.

In accordance with Italian doctrine all vehicle nomenclatures would be called by the type, light (L), medium (M) or Heavy (P) and by the weight until 13 June 1940 when it change to the year introduced. The official title for this tank and all of its variations was M.13, or medium tank of thirteen tons until 1940 when it changed to M.40, or medium tank introduced in 1940. In official documents and histories you will see it called M 13/40, M.13 or M.40.

The M.13 was developed to fulfill the need for a better-armored vehicle in the Italian armored formations. The tank battalion, the main striking force of the division, had to have adequate combat power and with the M.13 it obtained this needed combat power. When this tank was designed it was with on par with contemporary designs in other nations and was adequate for the early period of World War II. Only after further tank developments and advances would this series of tanks become inadequate.

M.11 Specifications:

Weight: 14 tons.

Crew: 4 (Commander/gunner, loader, driver and machine gunner).

Main Gun: One 47/32 gun in the turret
One 8mm Breda Model 38 coaxial in the turret.

Elevation: -10 degrees to +20 degrees

Traverse 360 degrees

Secondary Gun: Two Breda Model 38 in the hull
One Breda model 38 mounted for anti-aircraft defense

Ammunition Capacity: 47/32, 87 rounds of 47mm

8mm Breda model 38, 2,592 rounds

Road Speed: 30 kph

Cross Country Speed: 15 kph

Road operating radius: 210 KM

Cross Country Operating Radius: 10 hours of endurance

Horsepower: 125

Engine: SPA 8 T, V-8

Fuel: Diesel

Fuel Capacity: 145 Liters, 35 liters in reserve fuel tanks

Radio: None in initial series but corrected with RF 1 CA.
Commander's tank were equipped with an additional R.F. 2 C.A.

Armor (hull) 30mm front; 25mm sides and rear; 25mm deck and 6mm on the floor

Armor (turret) 42mm front; 25mm sides and rear; 15mm roof

Length: 4.92 meters (16'2")

Width: 2.20 meters (7'3")

Height: 2.37 meters (7'10")

Ground Clearance: .41 meters (1'4")

Trench crossing: 2.10 meters (6'11")

Vertical Obstacle: .8 meters (2'8")

Fording depth: 1 meter (3'3")

Dates of service: (1939-1945)

Italian Combat Use: Albania, Corsica, Croatia, Egypt, France, Greece, Italy, Libya, Rhodes, Sardinia, Sicily, Tunisia, and Yugoslavia

Exported: None

Combat Use by other countries in World War II. British Commonwealth, Germany, Great Britain, and Yugoslavian partisans

Production:	1940	235 M.13
	1941	475 M.13/376 M.14/1 M.15
	1942	319 M.14/104 M.15
	1943	115 M.15
	1944-1945	0

APPENDIX T

THE 1ST LIBYAN ARMORED DIVISION

The Italian army realized that they needed an armored division in Libya. Since the three Italian armored division were already committed to Italy and Albania it would be necessary to form the new armored division from the assets already in Libya or in transit to Libya in 1940. The 1st Libyan armored division was in the processes of being formed during the winter of 1940-1941. It was to have been based on and built around the Babini armored brigade. The Babini armored brigade would be the armored regiment for the new armored division. The motorized infantry regiment would have been the 10th Bersaglieri Infantry Regiment. The 10th Bersaglieri regiment was destroyed before it could effectively link up with the Babini armored brigade. The armored division table of organization was to be the following:

Babini Armored Brigade

I Medium Tank Battalion (M.11)
III Medium Tank Battalion (M.13)
XXI Light Tank Battalion (L.3)
LX Light Tank Battalion (L.3)

10th Bersaglieri Motorized Regiment

16th Bersaglieri Motorized Battalion
34th Bersaglieri Motorized Battalion
35th Bersaglieri Motorcycle Battalion

12th Artillery Regiment (to be reassigned from the 55th "Savona: Infantry Regiment)

I/12th Gruppo (12 75/27 guns)
II/12th Gruppo (12 75/27 guns)
III/12th Gruppo (12 100/17 guns)

APPENDIX U

ITALIAN GARRISON FORMATIONS ALONG THE WIRE, JUNE 1940

Giarabub

One infantry company
One Auto-MG company
3rd Libyan Fortress MG Battalion
Four companies of fixed MGs
One reinforced AT Platoon (6x47/32 AT guns)
One reinforced AA Platoon (6x20mm AA guns)
One Infantry Gun Platoon (2x65/17 guns)

El Garn ul Grein

One infantry company
One MG platoon
One AT Platoon (4x47/32 AT guns)
One AA Platoon (4x20mm AA guns)

Bir Scegga (Fort Maddalena)

One infantry company
One MG Company
One AT Platoon (4x47/32 AT guns)
One AA Platoon (4x20mm AA guns)

Gialo (Oasis Garrison)

One MG Battalion
One Libyan Replacement Battalion
One AT Company (12x47/32 AT guns)
One AA Platoon (4x20mm AA guns)
One Saharan Company

APPENDIX V

COMPARISON BETWEEN THE ITALIAN L.3 AND 1924 PATTERN ROLLS ROYCE ARMORED CAR.

How did the L.3 compare with the 1924 pattern Rolls Royce Armored Car?

The armored car was armed with one 13.9mm AT rifle and a 7.7mm machine-gun. The armored car had an armor thickness of about 6mm to protect it from armor piercing ammunition. According to a 1938 document of the Italian General Staff, the armor the armored car could be penetrated at a range of up to 600 meters by the 8mm machine-guns of the L.3.

The Rolls Royce was considered solid and with an actual max speed of about 40 Km/h. It was much faster then the L. light tank. It was 2.31 meters high vs the 1.30 meter of the L.3. The Armored Car was a better target than the lower silhouette of the Italian light tank. In addition the armored cars tires were very vulnerable and one puncture was enough to virtually immobilize it. The L.3 being a fully tracked armored vehicle.

The Boys anti-tank rifle had a max range of 450 meters. The anti-tank rifle could penetrate a 12mm of armor plate at 90 meters. The L.3 was only vulnerable to its fire from the rear and the sides only. The L.3 could close frontally, firing with its two machine guns, without any risk to penetration of its frontal armor.

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